

# STEM (Science, Technology, Engineering, Mathematics) Resources

## CONNECT 2 ENGINEERING (<http://www.connect2engineering.org>)



Connect2engineering is here to serve as a resource for engineering events and happenings in the region, as well as a comprehensive source for connecting with area professionals, students and faculty already in the engineering field. There's no better way to find out about careers in engineering than from those who enjoy it every day.

## CHANGE THE EQUATION (<http://changetheequation.org/improving-philanthropy/stemworks>)



This site hosts an extensive STEMworks Database of excellent STEM learning programs from around the country. Change the Equation (CTEq) is proud to host this database of programs that deepen young people's learning in science, technology, engineering and mathematics (STEM).

## DESIGN SQUAD NATION (<http://pbskids.org/designsquad/parentseducators/index.html>)



The DESIGN SQUAD NATION website is an online community that grew out of the DESIGN SQUAD television series that aired on PBS KIDS. The site targets kids ages 8 and older and features creative activities, engaging video, interactive games, and exciting contests. The goal of Design Squad is to give kids a stronger understanding of the design process, and the connection between engineering and the things we all use in everyday life.

## GEAR-TECH-21 (<http://4hset.unl.edu/4hdrupal/node/95>)



Geospatial and Robotics Technologies for the 21<sup>st</sup> Century (GEAR-Tech-21) aims to prepare youth for Twenty-first Century careers in Science, Engineering and Technology through GPS, GIS and robotics. Youth can participate in camps, club or afterschool activities and competitions led by adult volunteers to explore technical skills, career opportunities and life skills such as problem solving and teamwork.

## HOW TO SMILE.ORG (<http://howtosmile.org>)



SMILE's learning activities, tools, and services are available to all but are designed especially for those who teach school-aged children in non-classroom settings (like museums, zoos, aquaria, and afterschool or outdoor education programs). SMILE is dedicated to bringing the science, technology, engineering, and math (STEM) activities developed by informal science organizations around the country to the wider informal educator community, while encouraging that community to both use and contribute to SMILE's growing collection.

## NEBRASKA'S NATURAL RESOURCES DISTRICTS (<http://www.nrdnet.org>)



The Nebraska Association of Resources Districts (NRD's) has a wide variety of projects and programs to educate youth (PK-12th Grade) about conserving and protecting the state's natural resources.

## KHAN ACADEMY (<http://www.khanacademy.org>)



The Khan Academy is an organization on a mission. We're a not-for-profit with the goal of changing education for the better by providing a free world-class education for anyone anywhere. All of the site's resources are available to anyone. It doesn't matter if you are a student, teacher, home-schooler, principal, adult returning to the classroom after 20 years, or a friendly alien just trying to get a leg up in earthly biology. The Khan Academy's materials and resources are available to you completely free of charge.

## NEBRASKA SPACE GRANT (<http://ne.spacegrant.org>)



As part of NASA's National Space Grant College and Fellowship Program, we are funded to promote aerospace-related research, education, and public service programs to encourage a Diverse Workforce. This is accomplished through a national network of colleges, universities, industry and federal agency partners.

## NATIONAL AERONAUTICS AND SPACE ASSOCIATION (NASA)



### **NASA Education**

([http://www.nasa.gov/offices/education/programs/national/summer/education\\_resources/index.html](http://www.nasa.gov/offices/education/programs/national/summer/education_resources/index.html))

Visit the NASA Education Website. You'll discover a wealth of information for students and educators. Find current opportunities, education-related feature stories and information about other NASA education projects.

### **NASA Summer of Innovation**

(<http://www.nasa.gov/offices/education/programs/national/summer/home/index.html>)

This new NASA project is designed to improve the skills and enhance the engagement of American students in STEM.

### **NASA's Digital Learning Network**

([http://www.nasa.gov/multimedia/videogallery/index.html?media\\_id=105753841](http://www.nasa.gov/multimedia/videogallery/index.html?media_id=105753841))

NASA's Digital Learning Network presents a series of videoconferences to assist educators in staying current on NASA education resources and related products. Topics to include: Exploring Space Through Math, Robotics, NASA Fit Explorers, NASA eProfessional Development Network -- Robotics Course, MoonWorld, and On the Moon.

## NEBRASKA BLAST!



(<http://unlcms.unl.edu/4-h-youth-development/nebraska-blast/nebraska-blast-0>)

Nebraska BLAST! is a collaborative agreement between the 21st Century Community Learning Center program (21st CCLC) and the National Aeronautic and Space Administration (NASA). Nebraska BLAST! is a unique opportunity for 21st CCLC staff, teachers from 21st CCLC buildings, and middle school students to learn from and with each other through engaging hands-on learning opportunities focused on NASA/STEM content. The program welcomes all students in grades 4-8 participating in 21st CCLC programs, and intentionally targets students typically underserved and underrepresented in STEM career fields.

## PBS TEACHERS STEM EDUCATION RESOURCE CENTER (<http://www.pbs.org/teachers/stem>)



PBS offers all Americans the opportunity to explore new ideas and new worlds related to science, technology, engineering, and mathematics (STEM) learning through television and online content. On-line broadband access and digital media are dramatically changing the opportunities available to the nation's educators improving STEM education. Our recent national educator survey (Grunwald, 2009) indicates that more teachers than ever before are turning to digital media resources to help their students understand concepts, practice new skills and engage in exciting, authentic learning experiences.

## SCI GIRLS



(<http://pbskids.org/scigirls>)

The goal of SciGirls is to change how girls think about science, technology, engineering and math – STEM. Although SciGirls targets engaging girls (8-13 years old) in STEM activities, the material can be utilized with everyone. The strategies that are highly beneficial to girls have also been proven to work with all learners, including underrepresented youth.

## IMPROVING STEM EDUCATION FOR NEBRASKA OUT OF SCHOOL TIME (OST) (<http://ne.outofschoolstem.org/news.php>)



This website provides current news, resources, and a calendar of upcoming events related to STEM education in out of school time. Click on the "links" tab to access a comprehensive list of providers and organizations interested in supporting Nebraska middle school students who attend afterschool programs. Register to receive announcements regarding upcoming local news and events.

## STEM EDUCATION COALITION (<http://www.stemedcoalition.org>)



The Science, Technology, Engineering, and Mathematics (STEM) Education Coalition works to support STEM programs for teachers and students at the U. S. Department of Education, the National Science Foundation, and other agencies that offer STEM related programs. The STEM Education Coalition represents all sectors of the technological workforce – from knowledge workers, to educators, to scientists, engineers, and technicians. The participating organizations of the STEM Education Coalition are dedicated to ensuring quality STEM education at all levels.

**STRATEGIC AIR AND SPACE MUSEUM** (<http://www.sasmuseum.com>)



The Strategic Air and Space Museum, located near Ashland, Nebraska, is a museum that provides visitors with exciting permanent and traveling exhibits and educational programs related to aviation and space travel.

**UNITED STATES DEPARTMENT OF EDUCATION STEM EDUCATION: Report from the President's Council of Advisors on Science and Technology** (<http://www.whitehouse.gov/administration/eop/ostp/pcast/docsreports>)



"Everyone has a stake in improving STEM education. Inspiring all our students to be capable in math and science will help them contribute in an increasingly technology-based economy, and will also help America prepare the next generation of STEM professionals-scientists, engineers, architects and technology professionals-to ensure our competitiveness. The President's Council of Advisors on Science and Technology's (PCAST) report and work will be a valuable resource as we join efforts with the National Science Foundation and other federal agencies, educators, the business community, non-profits and philanthropies, to provide better support for STEM education to schools, classrooms, teachers and students." Arne Duncan, U.S. Education Secretary.

**UNIVERSITY OF NEBRASKA TRANSPORTATION SYSTEMS ENGINEERING TEACHER RESOURCE CENTER**



([http://tse.unl.edu/trc/lesson\\_plans.php](http://tse.unl.edu/trc/lesson_plans.php))

Middle and high school teacher participants in the Summer Professional Development Institute have developed high quality lesson plans that use transportation engineering applications to dynamically illustrate science and math concepts! Find repository of lesson plans here. No registration/password necessary.

**Y4Y: STEM COURSE**



(<http://y4y.ed.gov/Publish/CourseLanding.aspx?CourseMasterID=3>)

The You for Youth website will help you connect and share resources with your colleagues, provide professional development and technical assistance opportunities, and offer tools for improving your program practices. You and your students are already using science, technology, engineering and math (STEM) more than you may realize. This course suggests enjoyable ways to build on your existing knowledge as you help your students see that STEM is everywhere and for everyone.

**NEBRASKA 4-H  
NATIONAL 4-H**



(<http://4h.unl.edu/home>)

(<http://www.4-h.org>)

4-H is the Cooperative Extension System's dynamic, non-formal, educational program for today's young people. The program partners the cooperative efforts of youth, volunteer leaders, state land-grant universities, state and local governments, 4-H Foundations, and the Cooperative State Research, Educational and Extension Service of the US Department of Agriculture. Nebraska 4-H is comprised of youth, ages 5-19, and adults. Adults are involved as volunteers working with youth as leaders or on committees and boards providing the framework for 4-H. More than 400 Extension staff across the state serve as primary contacts for the more than 135,000 youth and 20,000 volunteers.

This list represents web-based resources recommended by a variety of afterschool providers. It is not intended to be a complete list of available STEM resources. If you have additional website resource recommendations, contact Kim Larson, Nebraska 21<sup>st</sup> Century Community Learning Centers, [kim.larson@nebraska.gov](mailto:kim.larson@nebraska.gov).

No endorsement by the Nebraska Department of Education or any of the conference partners is intended.