

STEM Teacher & Counselor Resources

(Adapted from information provided by the State of Minnesota)

These resources were compiled to support ongoing statewide initiatives to promote advanced science, technology, engineering and math (STEM) coursework and to encourage the exploration of STEM careers and industries. The majority of these Web resources are designed to assist teachers working with 7-12 grade students.

Comprehensive Resources

The National Science Digital Library

NSDL is the most outstanding library collection of STEM content on the web! Download the NSDL-On-a-Toolbar to provide a convenient way to access to NSDL content by resource type, subject, and grade level/audience type

http://www.bcps.org/offices/lis/STEM/stem_tl.htm

Classroom Activities & Lesson Plans

General STEM

Agriculture Teacher Resources (MN Dept. of Agriculture)

Materials can be integrated into existing subject areas such as social studies, science, environmental education, math and language arts.

www.mda.state.mn.us/kids/maitc/teachresources.htm

DragonflyTV Education Guides (PBS/National Science Teacher's Association)

Activities for topics related to Body and Brain, Earth and Space, Living Things, Matter and Motion, and Technology and Invention.

<http://pbskids.org/dragonflytv/parentsteachers/index.html>

The Fun Works Teachers & Instructors Section (Education Development Center)

STEM-related lesson plans, activities, career information and other resources.

www.thefunworks.org (free login required for teacher section)

NOVA Teacher's Guides by Subject (PBS)

Classroom activities, viewing ideas and interactive resources.

www.pbs.org/wgbh/nova/teachers/resources/subject.html

Engineering & Technology

Fields of Energy (MN Dept. of Agriculture)

Renewable energy DVD and Teacher Guide (grades 7-10), free downloads.

www.mda.state.mn.us/kids/maitc/fieldsofenergy.htm

GetTech Teachers Section (National Association of Manufacturers)

New roles for teachers, continuing education and classroom resources.

www.gettech.org/category2.asp?cat=1

K-12 Educators Section (Engineering K-12 Center)

Lesson plans, outreach programs for pre-college students and other engineering education resources.

www.engineeringk12.org/educators/default.php

Pre-College Teacher Resources (ASME)

Science and engineering lesson plans and other resources for K-12.

www.asme.org/Education/PreCollege/TeacherResources

Try Engineering

Lesson plans that align with education standards to allow teachers and students to apply engineering principles in the classroom.

<http://www.tryengineering.org/lesson.php>

Mathematics

Math Challenges/Problems/Puzzles (Minnesota Council of Teachers of Mathematics)

Links to online math problems for middle and high schoolers.

www.mctm.org/challenges.php

Math Resources (Minnesota Council of Teachers of Mathematics)

Comprehensive math forum, math archive, college-level mathematics information servers, and other resources. www.mctm.org/compsites.php

Math and Science Gateway (Cornell University)

Topic-specific education resources for grades 9-12.

www.tc.cornell.edu/Services/Education/Gateways/Math_and_Science

Sciences

Educator Features and Articles (NASA)

Teaching materials and classroom aides for instructors of grades K-4, 5-8, 9-12 and higher education.

www.nasa.gov/audience/foreducators/index.html

Education Section (National Geographic)

Classroom lessons and activities, news and multimedia resources.

www.nationalgeographic.com/education

Kinetic City

An interactive kid's website sponsored by the American Association for the Advancement of Science (AAAS) <http://www.kineticcity.com/>

Mad Sci Network

FAQs for common science fair topics, Web resources and answers from Ask-a-Scientist.
www.madsci.org

National Geographic Kids

Find animal facts, videos, games, blogs and other geography activities.
<http://kids.nationalgeographic.com>

NASA for Students

The space administration has interactive games, podcasts, information about upcoming events and programs, research tools for school assignments, and images from deep space.

www.nasa.gov/audience/forstudents/index.html

Newton's Apple Teacher Guides (PBS)

Science-related class activities listed by topic.

www.newtonsapple.tv/TeacherGuides_alphabet.php

Resources for Teaching and Learning Biology (American Institute of Biological Sciences)

Support for teaching General Biology, Nature of Science, Evolution and Science Inquiry for grades K-4, 5-8 and 9-12.

www.aibs.org/education/teaching_resources.html

Science Lab Teacher's Lab (U.S. Department of Energy, Office of Scientific & Technical Information)

Classroom and science fair resources, lesson plans, continuing education, career development and grants and funding information.

www.osti.gov/sciencelab/teachers.html

ScienceLab Students (U.S. Department of Energy Office of Science)

Information for elementary, middle and high school students, including homework help, experiments and science fair ideas.

www.osti.gov/sciencelab

Science NetLink

A website of classroom lessons, interactive classroom tools and teaching resources.

Sponsored by the American Association for the Advancement of Science (AAAS)

<http://www.sciencenetlinks.com/>

Science Matters booklet (Medtronic)

Free download of booklet for teachers and parents geared toward encouraging science exploration in K-6 grade students.

www.medtronic.com/foundation/community-ed-science-matters.html

USGS Education (U.S. Geological Survey)

Online resources include lessons, data, maps and more, to support K-12 education and university-level inquiry and research.

<http://education.usgs.gov/>

Other Teaching Resources

What is Technology Literacy? (SciMath)

Exploration of the range of factors involved in developing systems that solve problems and extend human capabilities. <http://scimathmn.org/technology.htm>

TAP Junior (The Ada Project)

Links to programs and resources that support girls exploring STEM disciplines. <http://women.cs.cmu.edu/ada/Resources/TAPJunior/>

Project Lead the Way

National, not-for-profit educational program that gives middle and high school students a rigorous, hands-on curriculum in science and engineering. www.pltw.org/index.cfm

Educator Section (SciMath)

Ongoing learning for educators, professional development experiences, collegial learning communities and exploration of resources impact interactions with students in STEM classrooms. <http://scimathmn.org/educators.htm>

Teacher's Corner (NASA)

Standard's, educator workshops and links to teacher-created Web sites. www.grc.nasa.gov/WWW/K-12/teacher.htm

STEM (National High School Alliance)

Links to current national, minority-focused and state initiatives, and school-based programs and curricula. www.hsalliance.org/stem