

STEM Education Resources Guide

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This Guide is not exhaustive. There are many more resources on STEM education, and we will continue to update the Guide periodically. We also invite our readers to send us resources they have found to be useful. You may email us at info@grantproseinc.com.

GRANTS AND AWARDS

Foundations, Associations, and Corporations

Many foundations offer smaller STEM grants targeted at educators and classrooms; others offer equipment or programs only.

American Honda Foundation

<http://corporate.honda.com/america/philanthropy.aspx?id=ahf>

Supports youth education in STEM subjects and the environment. Eligible organizations are nonprofits, school districts, and elementary/secondary schools.

Biogen Idec Foundation

http://www.biogenidec.com/biogen_idec_foundation.aspx?ID=11587

Supports science education, outreach programs, and STEM education in Massachusetts and North Carolina.

The Bay and Paul Foundations, Inc.

<http://www.bayandpaulfoundations.org/areas.html>

Pre-collegiate education is an area of interest. Supports math and science programs, but specifies that first-time math and science grants are restricted to the New York City area. Also emphasizes professional development.

Bayer USA Foundation

<http://www.bayerus.com/Foundation/guidelines/Giving.aspx>

Funds hands-on, inquiry-based STEM education programs. Raleigh-Durham, NC, is one of seven geographic focus areas; others are Baytown/Houston, TX; Berkeley/Northern CA; Kansas City, MO; Northern NJ; Pittsburgh, PA; and Shawnee, KS. The foundation also considers STEM education programs with a national focus.

Burroughs Wellcome Fund

<http://www.bwfund.org/grant-programs/science-education>

Funding to increase science literacy in children. Student Science Enrichment Program supports science education activities for primary and secondary students in North Carolina.

Burroughs Wellcome Fund

<http://www.bwfund.org/grant-programs/science-education/promoting-innovation-science-and-mathematics>

Promoting Innovation in Science and Mathematics provides awards to North Carolina public school teachers for equipment, materials, and supplies that support their teaching efforts in science and mathematics; awards are also made for professional development.

Duke Energy Foundation

<http://www.duke-energy.com/community/foundation/areas-of-focus.asp>

Education is one of the foundation's focus areas, with an emphasis on 1) K-12 STEM education, and 2) higher education, focused on STEM and environment-related programs.

Ewing Marion Kauffman Foundation

<http://www.kauffman.org/>

Has an interest in K-12 STEM education; initiatives are concentrated in the Kansas City region. The majority of grants are awarded to staff-identified organizations, but letters of inquiry are accepted.

GlaxoSmithKline Corporate

<http://us.gsk.com/html/community/community-grants-corporate.html>

Supports K-12 science education or K-12 literacy, improvements in national K-12 education, and teacher professional development.

Motorola Solutions Foundation

<http://responsibility.motorolasolutions.com/index.php/solutions-for-community/com02-foundation/>

Innovation Generation grants provide funding for STEM education programs; priority in the past has often gone to Motorola communities.

National Science Teachers Association

<http://www.nsta.org/about/competitions.aspx>

NSTA makes numerous awards to educators, and co-sponsors several competitions for science teachers and students, including eCYBERMISSION (with the U.S. Army), Shell Science Lab Challenge, America's Home Energy Education Challenge (with the U.S. Department of Energy), and ExploraVision (with Toshiba).

Northrup Grumman Foundation

<http://www.northrupgrumman.com/CorporateResponsibility/CorporateCitizenship/Philanthropy/Pages/Foundation.aspx>

Northrup Grumman funds national-level STEM programming that enhances student education and provides teachers with training and tools necessary for classroom success.

Piedmont Natural Gas Foundation

<http://www.piedmontng.com/ourcommunity/ourfoundation.aspx>

One of the foundation's focus areas is K-12 STEM education, including an emphasis on student performance, grade level readiness, literacy, graduation rates and overall success for students, and programs that incorporate science, technology, math and engineering skills critical to success in a global economy.

RGK Foundation

<http://www.rgkfoundation.org/public/guidelines>

Within its focus area of education, RGK's primary interests include programs that focus on K-12 education, particularly mathematics, science and reading.

Samsung

<http://www.samsung.com/us/solvefortomorrow/background.html>

Solve for Tomorrow program is an education contest to foster enthusiasm in STEM education. Schools apply for technology awards; state winners receive packages worth \$35,000, and five national winners, packages of \$140,000.

Toshiba America Foundation

<http://www.toshiba.com/taf/index.jsp>

Grants to science and math teachers of Grades K-5 and Grades 6-12, for hands-on classroom projects. The foundation supports public and private schools in the U.S.

Verizon Foundation

<http://www.verizonfoundation.org/grants/>

One of Verizon's focus areas is STEM education for K-12. Grants are by invitation only; potential applicants must contact a Community Relations Manager to begin the process.

Federal Grants

Grants.gov; search engine for all federal grants

- <http://www.grants.gov/web/grants/home.html>

U.S. Department of Education

- Open grant competitions: <http://www.ed.gov/grantapps>
- STEM programs at DOE: <http://ed.gov/about/inits/ed/green-strides/stem.html>

National Science Foundation

- Search engine for NSF grants: <http://www.nsf.gov/funding/index.jsp>
- Active funding opportunities:
http://www.nsf.gov/funding/pgm_list.jsp?org=NSF&ord=date
- Recently announced funding opportunities:
http://www.nsf.gov/funding/pgm_list.jsp?org=NSF&ord=rcnt

CLASSROOM RESOURCES

Arizona Technology Integration Matrix

<http://www.azk12.org/tim/>

First developed in Florida and then updated for Arizona, the Technology Integration Matrix (TIM) shows (with short videos) how teachers can integrate technology into classroom instruction. The matrix includes lesson plans and videos exemplifying technology integration at different grade levels and in different subjects. The lessons are aligned with Common Core Standards for ELA and mathematics and Arizona standards for technology, science and social studies. Each cell of the matrix contains two lessons plans with a short video of the lesson.

Army Educational Outreach Program

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

Sponsored by the U.S. Army, AEOP provides “education, competitions, internships, and practical experiences designed to engage and guide students and teachers in STEM education.”

Centers for Disease Control (CDC)

<http://www.cdc.gov/bam/teachers/activities.html>

http://www.cdc.gov/excite/ScienceAmbassador/ambassador_pgm/lessonplans_middleschool.htm

The CDC has well-developed activities for 9- to 13-year old students and their teachers related to health, wellness, epidemiology, food and nutrition, safety, and stress. Most lessons are based on a 5E (Engagement, Exploration, Explanation, Elaboration, Evaluation – plus Extension) Learning Cycle and have clearly written teacher background material and instructions.

Coldspring Harbor DNA Learning Center

<http://www.dnalc.org/websites/> has many interactive lessons for learning about DNA and genetics and teacher resources. Teachers should register (no charge) at <http://www.dnai.org/members> to use lesson builder resources.

Diagnoser

<http://www.diagnoser.com>

This website (built by an NSF project) has assessments and lessons designed to build understanding of specific science concepts based on research into student misconceptions, mostly in physics. Teachers must register (free) and then can view lesson plans and set up for their students to use the formative assessment part of the website. Teachers are provided with reports on student progress. Some lessons are appropriate for 7th and 8th grade students.

Family Math

<http://www.lawrencehallofscience.org/equal/aboutfm.html>

This website features books and workshops from the Lawrence Hall of Science in Berkeley addressing parent involvement in mathematics education and how to put on Family Math nights at your school.

Hewlett Packard Catalyst Initiative

<http://www8.hp.com/us/en/hp-information/social-innovation/catalyst.html#.UvqFIyh7EdI>

Network of educators, educational institutions, and stakeholders exploring innovative approaches to STEM education. Offerings include the HP Catalyst Academy (online mini-courses for educators), Multi-versity (ways to provide STEM education to diverse students), Pedagogy 3.0 (exploring STEM teacher training), and more.

International Technology and Engineering Educators Association

<http://www.iteea.org/Publications/publications.htm>

Offers varied resources including professional development and publications.

Kenan Fellows Program for Curriculum and Leadership Development

<http://kenanfellows.org/curriculum-project-list>

Database with examples of STEM activities, lessons and curricular units organized by content level and content area.

Learn Genetics/Teach Genetics from the University of Utah

<http://teach.genetics.utah.edu/>

This website has excellent lesson plans for teaching genetics and biochemistry starting in the older elementary grades and through middle and high school. It includes many additional resources, including sample letters to send home to parents and interactive videos. Some of the lessons are also available in Spanish (<http://learn.genetics.utah.edu/es/>).

Microsoft

<http://www.microsoft.com/en-us/diversity/programs/digigirlz/default.aspx>

Microsoft's free DigiGirlz High Tech Camps are offered at locations across the U.S. and the world; participants pay for transportation and lodging. DigiGirlz Day is a one-day program, held at locations worldwide, to provide high school girls with a taste and an understanding of technology careers. Microsoft also offers online DigiGirlz classes.

NASA

For K-4: <http://www.nasa.gov/audience/foreducators/k-4/index.html#.UscofvvxuSo>

For 5-8: <http://www.nasa.gov/audience/foreducators/5-8/index.html#.Usco-PvxuSp>

NASA has some great lessons that integrate across STEM fields. For example, their lesson at http://www.nasa.gov/pdf/752218main_Exploring_Stars.pdf integrates astronomy, technology, mathematics, and history of science and is aligned to Common Core standards.

National Ocean and Atmospheric Administration (NOAA)

<http://www.education.noaa.gov/about.html>

This website is a central portal to NOAA's educational resources. Lots of great activities for weather, climate, and ecosystem study.

National Science Foundation

<http://www.nsfresources.org/home.cfm>

This page on the NSF website—Resources for STEM Education—details resources and findings from NSF-funded projects on teacher development, instructional materials, assessment, and research. Resources are extensive, reaching back in some cases to projects over the last 10 years.

Project Jason

<http://www.jason.org/>

STEM lessons and activities tied to live web events with scientists.

Teach Engineering

<http://www.teachengineering.org/>

Extensive database with examples of STEM activities, lessons, and curricular units organized by grade level and subject matter.

The Teaching Channel

<https://www.teachingchannel.org/>

This website is an interactive teacher community with professionally produced classroom videos. Many different short videos – some nice examples of Common Core in practice.

Time Warner Cable

<http://www.connectamillionminds.com/about>

Connect a Million Minds is an initiative to create awareness of the importance of STEM education. Programs include “The Connector,” an online resource to help students and parents find STEM learning opportunities; public services announcements; and grants.