Engineering Websites

4-H Robotics Resources
http://www.4-hmall.org/Catalog/SearchResults.aspx?SearchQuery=robotics
K;1st;2nd;3rd;4th;5th;6th;7th;8th;9th;10th;11th;12th
Website Types  Teacher Background
The 4-H store provides teacher guides and equipment for leading robotics programs

Bay Bridge Construction Cameras
http://baybridgeinfo.org/construction-cams
1st;2nd;3rd;4th;5th;6th;7th;8th;9th;10th;11th;12th
Website Types  Student Videos;Teacher Videos
Real time views of the bridge and link at bottom of screen with the whole project condensed into 4 minutes.

Bay Bridge Fact Sheet
http://baybridgeinfo.org/factsheets
1st;2nd;3rd;4th;5th;6th;7th;8th;9th;10th;11th;12th
Website Types  Teacher Background
Series of fact Sheets about the new Bay Bridge Construction. Information on the steel, bike paths, deconstruction and more

Bridging the Bay: Bridging the Campus
http://www.lib.berkeley.edu/news_events/bridge/
1st;2nd;3rd;4th;5th;6th;7th;8th;9th;10th;11th;12th
Website Types  Teacher Background
This is an online version of a document exhibit about the bridges of the Bay, the structures and politics.

Building Big - Build a Suspension Bridge
http://www.pbs.org/wgbh/buildingbig/educator/act_suspension_ei.html
2nd;3rd;4th;5th;6th;7th;8th;9th;10th;11th;12th
Website Types  Student Background;Teacher Activities;Teacher Background
This site has a nice activity for building a desktop suspension bridge. There are also more activities on "building Big" about building Dams, skyscrapers, domes and tunnels.

CA Energy Commission-Energy Scientists
http://www.energyquest.ca.gov/scientists/
3rd;4th;5th;6th;7th;8th;9th;10th;11th;12th
Website Types  Student Background
A gallery of pictures and biographies of energy pioneers. Parents: Visit www.EnergyQuest.ca.gov

City Technology
http://www.citytechnology.org/
K;1st;2nd;3rd;4th;5th
Website Types  Student Background;Student Online Activities;Teacher Activities;Teacher Background
A collaboration of college faculty in Engineering and Education, public elementary teachers and children.
**Curiosity Machine**  
http://www.curiositymachine.org/  
K;1st;2nd;3rd;4th;5th;6th;7th;8th  
**Website Types**  
Student Background;Student Online Activities;Teacher Background  
Log in is required, but is free. Students can earn "badges." The Curiosity Machine hosts collection of exciting (and sometimes very challenging) experiments and projects designed for children, along with their parents, to encourage curiosity, creativity and persistence!  
1. **OBSERVE** watch videos of actual engineers and scientists talking to children about the inventions and projects they work on.  
2. **BUILD** get ideas from the videos and create your very own invention.  
3. **SHARE** share your adventure photos and videos, sketches and thinking.  

**Edutopia - Blog on Robotics in Classroom**  
http://www.edutopia.org/blog/student-robotics-k-12-curriculum-mark-gura  
K;1st;2nd;3rd;4th;5th;6th;7th;8th;9th;10th;11th;12th  
**Website Types**  
Teacher Background  
This blog post contains information on robotics programs and how to’s.  

**Engineer Girl**  
http://www.engineergirl.org  
1st;2nd;3rd;4th;5th;6th;7th;8th;9th;10th;11th;12th  
**Website Types**  
Student Background;Teacher Background  
The Engineer Girl website tries to bring national attention to the opportunity engineering represents to all people at any age, but particularly to women and girls. The site is conveniently organized into 4 main areas of interest: Space, Environment, Medicine, and Communications. This makes it much easier to help girls understand how they could be controlling and preventing pollution, developing new medicines, creating advanced technologies, even exploring new worlds.  

**Engineering Adventures**  
http://eie.org/engineering-adventures/curriculum-units  
K;1st;2nd;3rd;4th;5th;PK  
**Website Types**  
Student Background;Student Online Activities;Teacher Activities;Teacher Background;Student Videos;  
Engineering Everywhere is a FREE engineering curriculum for elementary level students. Choose from seven units with fun, hands-on engineering design challenges based on real events around the world  

**Engineering Design Challenges for National Engineers Week Foundation**  
http://www.discovere.org/  
K;1st;2nd;3rd;4th;5th;6th;7th;8th  
**Website Types**  
Teacher Activities  
This website has a collection of tested and true design challenges that you can do in your classroom with your students  

**Engineering Everywhere**  
http://eie.org/engineering-everywhere  
6th;7th;8th;9th;10th;11th;12th  
**Website Types**  
Student Background;Student Online Activities;Teacher Activities;Teacher Background;Student Videos;  
Engineering Everywhere is a FREE engineering curriculum for middle school-aged youth in afterschool and camp programs. EE empowers youth to tackle real-world engineering problems using the engineering design process, creativity, and collaboration.  

**Engineering is Elementary**  
http://legacy.mos.org/eie/index.php  
K;1st;2nd;3rd;4th;5th  
**Website Types**  
Teacher Background
The Engineering is Elementary® (EiE) project fosters engineering and technological literacy among children. EiE has created a research-based, standards-driven, and classroom-tested curriculum that integrates engineering and technology concepts and skills with elementary science topics. EiE lessons not only promote K-12 science, technology, engineering, and mathematics (STEM) learning, but also connect with literacy and social studies.

**Engineering is Elementary Resource Page on Bridges**


K;1st;2nd;3rd;4th;5th

Website Types  Teacher Background

This is a simple page with resources for doing a unit on Bridges

**FOSS Engineering Connections**

http://www.fossweb.com/engineering-connections

K;1st;2nd;3rd;4th;5th

Website Types  Teacher Background

Use this site to download a PDF showing engineering connections for each of the FOSS units.

FOSS modules provide students with opportunities to engage in engineering experiences to develop solutions to problems, construct and evaluate models, and use systems thinking. The FOSS engineering icon, found in the sidebar of each FOSS Investigations Guide, indicates opportunities for addressing the core ideas of Engineering, Technology, and Applications of Science as described in A Framework for K–12 Science Education. The core ideas are listed in the downloadable PDF with the grade K-2 and 3–5 grade band expectations from the framework and associated NGSS.

**How Stuff Works**

http://www.howstuffworks.com

K;1st;2nd;3rd;4th;5th;6th;7th;8th;9th;10th;11th;12th

Website Types  Student Background;Student Online Activities;Teacher Activities;Teacher Background

A great place to learn about the way all kinds of things function in the world. Learn about everything from guitars, to cruise missiles, to engines, to weather, to the cells in your own body. For parents, see "Homestuff" for great at-home learning activities.

**How to Build and Launch a Foam Rocket**

http://www.jpl.nasa.gov/education/foamrocket/

3rd;4th;5th;6th;7th;8th

Website Types  Teacher Activities;Teacher Background

In NASA's "Foam Rocket" activity, students build rubber-band-powered rockets and launch them at various angles to learn about rocket stability and trajectory. This lesson provides students with an excellent hands-on perspective on key mathematical concepts as well as data analysis and reasoning.

**HowToSmile.org**

http://howtosmile.org/

K;1st;2nd;3rd;4th;5th;6th;7th;8th;9th;10th;11th;12th

Website Types  Teacher Activities;Teacher Background;Teacher Videos

Are you looking for new ways to teach kids about math and science? Do you want activities that meet you where you live, whether your “classroom” is an active volcano, the shark tank at the local aquarium, or your own kitchen table? You’ve come to the right place. SMILE is collecting the best educational materials on the web and creating learning activities, tools, and services – all designed especially for those who teach school-aged kids in non-classroom settings. We are a group of science museums dedicated to bringing science, technology, engineering, and math (STEM) out of the academic cloister and into the wider world. Our organizations are resource hubs for educational programs that involve people of all ages and backgrounds. Together we’re gathering the best STEM education materials from the web, and encouraging educators to both use and contribute to the growing collection

**i-STEM Lesson Plans**

https://www.istemnetwork.org/resource/educational/lesson.cfm

K;1st;2nd;3rd;4th;5th;6th;7th;8th;9th;10th;11th;12th

Website Types  Teacher Activities;Teacher Background

This site has a lot of lesson plans on different STEM topics. You can sort by grade level, topic and more.
Lego provides information on their lego robotics programs for school and aferschool programs

Lego Education
https://education.lego.com/en-us/lesi/elementary
K;1st;2nd;3rd;4th;5th;6th;7th;8th;9th;10th;11th;12th
Website Types  Teacher Activities;Teacher Background
Lego provides information on their lego robotics programs for school and aferschool programs

NASA’s resource page for Robotics Programs
http://robotics.nasa.gov/edu/k-5.php
K;1st;2nd;3rd;4th;5th;6th;7th;8th;9th;10th;11th;12th
Website Types  Teacher Activities;Teacher Background
This site provides links to teacher lesson plans and programs

National Science Digital Library
http://nsdl.org/
K;1st;2nd;3rd;4th;5th;6th;7th;8th;9th;10th;11th;12th
Website Types  Student Online Activities;Teacher Activities;Teacher Background
This website is a huge resource for finding activity ideas, videos, photos and news about science and technology. They have a section specifically devoted to K-12 teachers.

NEES Academy for K-12 Teachers
http://nees.org/education/for-teachers/k12-teachers
K;1st;2nd;3rd;4th;5th;6th;7th;8th;9th;10th;11th;12th
Website Types  Teacher Activities;Teacher Background
The Network for Earthquake Engineering Simulation has put together a host of resource for K-12 teachers on the science behind earthquakes and how to engineer or built environment to withstand them.

Oobleck
http://www.lawrencehallofscience.org/kidsite/activities/oobleck/
K;1st;2nd;3rd;4th;5th
Website Types  Student Background;Student Online Activities;Teacher Activities
Landing on a planet, taking samples, and returning to Earth is a triple challenge. What if the planet’s all goopy Oobleck that acts like a solid and a liquid? Make and test goop, design a spacecraft, share your engineering online and discover how others meet the challenge.

Parachute Drop
http://www.lawrencehallofscience.org/kidsite/portfolio/parachute-drop/
K;1st;2nd;3rd;4th;5th
Website Types  Student Background;Student Online Activities;Teacher Activities
Skydivers rely on parachutes to carry them safely to Earth. Test materials like wax paper, a thin plastic bag, and a coffee filter to make and drop mini-parachutes. Which material makes the slowest drop? Enter results online and find out what other experimenters discovered.

PBS Design Squad
http://pbskids.org/designsquad/
K;1st;2nd;3rd;4th;5th;6th;7th;8th
Website Types  Student Background;Student Online Activities;Teacher Activities;Student Videos
This website has activities for kids to do. Design Challenges, videos and more.

Robotics for Fun
http://www.roboticsforfun.com/
K;1st;2nd;3rd;4th;5th;6th;7th;8th;9th;10th;11th;12th
Website Types  Teacher Background
This Oakland organization hosts classes for children in the Bay Area to attend on robotics

1/26/2015  Websites are an excellent place for finding activity ideas.
Suspension Bridge Construction
http://www.swe.org/iac/LP/bridge_02.html
2nd;3rd;4th;5th;6th;7th;8th;9th;10th;11th;12th

Website Types  Teacher Activities
This is a nice activity for a suspension bridge using chairs and rope and a big piece of cardboard.

TEACH Engineering
http://www.teachengineering.org/
K;1st;2nd;3rd;4th;5th;6th;7th;8th;9th;10th;11th;12th;PK

Website Types  Teacher Activities;Teacher Background
The TeachEngineering digital library provides teacher-tested, standards-based engineering content for K-12 teachers to use in science and math classrooms. Engineering lessons connect real-world experiences with curricular content already taught in K-12 classrooms. Mapped to educational content standards, TeachEngineering's comprehensive curricula are hands-on, inexpensive, and relevant to children's daily lives.

Teaching NGSS Engineering Design Through Media
http://www.pbslearningmedia.org/collection/ngss-eng/?topic_id=892
K;1st;2nd;3rd;4th;5th;6th;7th;8th;9th;10th;11th;12th

Website Types  Teacher Activities;Teacher Background;Student Videos;Teacher Videos
Teaching Next Generation Science Standards (NGSS) Engineering Design Through Media is a collection of activities and professional development resources drawn from programs such as WGBH's Design Squad Nation and the Engineering is Elementary® project at the Museum of Science, Boston. These media-based resources illustrate and deepen teachers' understanding of Next Generation Science Standards and help them bring engineering alive for students at the elementary, middle, and high school levels.

The Works List of Engineering Resources
https://www.theworks.org/educators-and-groups/educator-resources/resources-from-our-friends/
K;1st;2nd;3rd;4th;5th

Website Types  Teacher Background
List of links to additional engineering resources

Try Engineering
http://tryengineering.org/teachers.php
K;1st;2nd;3rd;4th;5th;6th;7th;8th;9th;10th;11th;12th

Website Types  Student Background;Student Online Activities;Teacher Activities;Teacher Background
TryEngineering offers teachers resources for students all about engineering. Here you'll find lesson plans for students of all ages that are aligned to standards, descriptions of degree fields, lists of national programs and student opportunities.

What's That Stuff?
http://pubs.acs.org/cen/whatstuff/stuff.html
5th;6th;7th;8th;9th;10th;11th;12th

Website Types  Student Background;Teacher Background
Ever wanted to know what something was made of? This site from Chemical and Engineering News gives in-depth explanations of what’s in everything from kitty litter to silly putty to asphalt.

Women and Minorities in Science and Engineering
http://people.mills.edu/spertus/Gender/wom_and_min.html
K;1st;2nd;3rd;4th;5th;6th;7th;8th;9th;10th;11th;12th

Website Types  Student Background;Teacher Background
A comprehensive listing of sites related to Women and Minorities in Science and Engineering. Links to sites about Latinos, African-Americans and American Indians, Gay and Lesbians and Persons with Disabilities, in science. Organizations, biographies and additional reading materials are a sampling of what you will find here.