

Elementary STEM Design Challenges

**Using simple machines to integrate Science, Math and Technology and Engineering Education*

Simple machines and the science, math and technology and engineering applications that are taught with them provide critical knowledge for students in a manufactured and engineered world. Resources for creating simple projects that demonstrate simple machines can be found at a variety of sources. Some are listed below.

Purdue University Technology Leadership and Innovation Graduate program

The materials and projects brought to you in this workshop come from the Technology Leadership and Innovation Graduate students at Purdue University. I saw these projects demonstrated at ITEEA and like any good teacher, borrowed them for classroom use.

TEEAP – *The Technology and Engineering Education Association of PA* provides EbD resources for teachers. The exemplars demonstrate a host of design briefs and learning packets and can be downloaded at: <http://www.teeap.org/Publications/index.html>

The Design Squad – *Design Squad* was developed by a MIT graduates (Nate Ball and cohorts) who have promoted STEM since graduating from MIT. They provide links to excellent resources for your classroom. Videos showing kids actually doing projects can be downloaded for use in the classroom.

www.pbskids.org/designsquad/parentseducators/index.html

eGFI - An engineering and technology education collaborative resource for teachers, *eGFI* is bound to have something you will use or need for your classroom. Activity based learning materials that are grouped according to grade level is one of the best features of this website. It's easy to use and understand and it's endorsed by ASME.

<http://teachers.egfi-k12.org/>

NASA – NASA has some wonderful resources and they are all free!! Examples of propulsion to how the ear works can be found on the site.

http://www.nasa.gov/audience/foreducators/topnav/materials/listbytype/Our_Ears_and_How_They_Work.html

Math Resources – this web page is a fine link to understanding concepts in math and their applications to the world around us.

<http://www.cpm.org/teachers/resourcesGC.htm>

Defined STEM – although a great resource with video content demonstrating science and math principles, the *Defined STEM* website must be purchased. For a year many IU's in Pa did purchase the use of the resources for all IU members. Check to see if your IU is a member and request a username and password.

<http://www.cpm.org/teachers/resourcesGC.htm>