# Inside engage

May 2013

Engineering Fundamentals Participates in Engage Engineering

There is a national Extension Services Project funded by the National Science Foundation, called ENGAGE. This is not to be confused with our program, also called Engage (we are flattered that they would choose the same name). Extension Services projects are modeled after the Cooperative Extension Service in Land Grant Institutions and are intended to extend proven, research-based strategies into STEM education. Further information on the project is at http://www.engageengineering.org/. We are one of the schools participating in the consortium, and have received two mini-grants. The mini-grants are described below.

Spatial Visualization

Strong spatial visualization skills are cognitive skills that are linked to success in science, technology, engineering, and mathematics (STEM) fields. Well-developed math and verbal skills are universally recognized as necessary for success in STEM and the National Science Board maintains that spatial skills should be added to this list.[1] Students are given a spatial visualization test at the beginning of EF 105, Computer Methods in Engineering Problem Solving . Those students who show a weakness in this area are given extra help and instruction in the area of spatial visualization. Test your knowledge of spatial visualization, and see if you can determine what the object would look like if rotated 90° about the z-axis.
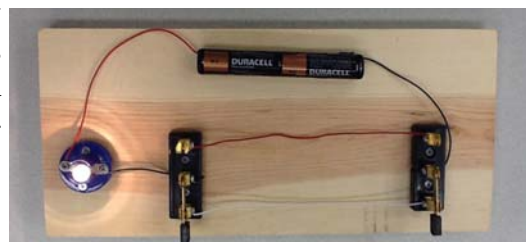

A **B** **C** **D**

[1]http://www.engageengineering.org/?page=26
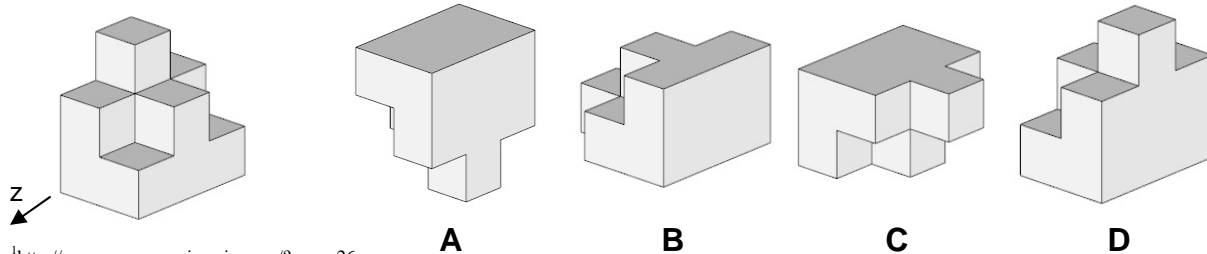
Everyday Engineering Examples

What sets everyday examples apart from "just an example"? Everyday examples are designed to be things students already are familiar with so they have a comfort level and some basic intuitive understanding they can apply to the engineering concept.[2] Incorporating everyday examples has been a part of our program since the beginning. ENGAGE Engineering resources have provided us with additional ideas. One example has been to use a "Kill a Watt" meter to measure volts, amps, Watts, and frequency when hair dryers, phone chargers, and other objects are plugged into an outlet. An example we developed is a model of 3-way switches (two switches that control the same light), as shown at the right.

[2]http://www.engageengineering.org/?page=161

Spatial Visualization Answer: B