



Differences in Science and Engineering Projects

The **2014-2015 DCSS Science and Engineering Fair** is putting a special emphasis on Engineering. Please encourage some of your students to consider a project that uses the **Engineering Method** (aka the **Design Process**) rather than the **Scientific Method**. Some students might find that the Engineering Method a little more exciting than the traditional approach.

Check out the differences in the two methods in the table below. Keep in mind that an engineering project is about solving a problem or meeting a need while a science project focuses on gaining new knowledge.

Scientific Method	Engineering Method (Design Process)
Conduct background research.	Conduct background research.
Ask a question.	Identify a problem or need.
Define a hypothesis.	Decide how you will solve the problem.
Design an experiment to test the hypothesis.	Prepare a preliminary design to solve the problem.
Test the hypothesis with an experiment.	Build and test a prototype of the thing you designed.
Collect and analyze data.	Retest and redesign as needed.
Draw a conclusion.	Draw a conclusion.
Share your results.	Share your results.

The Engineering Design Planner

Steps of Design Cycle	Notes
1. Define a problem or need	Problem Statement: Criteria: Constraints:
2. Brainstorm ideas to solve problem or meet need.	
3. Research the problem or need.	
4. Develop a list of ideas to solve the problem or need.	Idea 1 – Idea 2 – Idea 3 – Idea 4 –
5. Select the best idea.	
6. Build a prototype or model.	
7. Test the prototype or model.	Did it work like you expected? What do you need to change?
8. Innovate/Improve the design.	
9. Communicate your results.	