**Nancy Grade 8 Engineering Design Scenario NGSS Practices Problem**

**Nancy-Module 3 -- Reflecting and Building on Change**

Because problem-based learning in science strives to engage students in applying their basic science knowledge to solve a more complex problem, students are encouraged to share their ideas as well as to find different pathways to a solution. The process whereby students express ideas, debate their merits, and then test these ideas is central to science.

A simple design problem involving limited numbers of variables is the source of Nancy's final project-based activity. As students are challenged to design the most efficient weight-bearing paper truss, they offer technical support to one another and find the answers for themselves. Again, Nancy uses metaphor in her teaching-this time as chief engineer.

**Paper Truss Activity**

At the end of the year, Nancy introduces a final "design-to-constraint" activity. Given one sheet of paper, students are challenged to trim away as much paper as possible, while using what remains to support a lead weight.