



Curriculum Units by Fellows of the Yale-New Haven Teachers Institute  
2004 Volume IV: Energy, Engines, and the Environment

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## **Machines: Designing Form and Function**

Guide for Curriculum Unit 04.04.10  
by Sara E. Thomas

This unit will teach students about renewable and nonrenewable sources of energy using boats as a vehicle. I would like students to create their own model of a boat with a simplified steam engine. Students will work as industrial designers: choosing the function of their boat, drawing up blue prints, working through a series of models, determining how to increase efficiency, and finally addressing the aesthetics of the boat as a form. This unit will be appropriate for all students because it accommodates a variety of learning styles, most specifically kinesthetic learning. It will enforce everyday skills such as problem solving, creating and testing a hypothesis, measuring, analyzing data and applying the elements and principles of design.

(Recommended for Art, grades 9-12.)

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