Curriculum Units by Fellows of the Yale-New Haven Teachers Institute
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Physics Around the School: Simple Machines In and Out of the Classroom

Guide for Curriculum Unit 03.04.08
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This unit focuses on the area of mechanics by allowing children to explore and become familiar with the laws of motion and simple machines. Through the use of concrete examples that contextualize and make meaningful physics principles and processes involved in day-to-day living, students will be able to understand how physics principles are an essential part of many important objects and processes around us. Throughout the unit, students uncover and rediscover the surrounding world, as we explain the reasons why things work the way they do and how they affect our everyday life.

A historical perspective is offered in order to contextualize the reasons and importance of why some objects are in existence. Thus, the following questions are posed and answered. What is the importance of the lever? Why do we need the inclined plane? What was life before the wedge, pulley? Which are the physical principles involved in the function, use, design of the given object? What are some of the most important inventions, utensils that originate in the basic principles, and uses of these objects?

This is an integrated science unit that meets the New Haven Public Schools' curricular frameworks, and specifically performance standards on science, language arts, and mathematics. This unit is geared toward elementary school children in the first to fourth grade. The ability to integrate this unit with language arts provides many opportunities for extensions into other curricular areas. A list of student, teacher, and electronic resources is provided for the implementation and extensions of the unit.

(Recommended for Integrated Science, Mathematics and Language Arts, grades 1-4.)