

Special Events

On occasion, WPI hosts special events, such as the robotics demonstration shown here. WPS students interact directly with college professors and



ask questions about the engineering process. They are encouraged to operate the equipment—in this case, a working robot.

Events of this type help young students become more comfortable with engineering concepts and problem solving.

For more information, visit www.wpi.edu/Academics/PIEE or contact the project staff:

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Partnerships Implementing Engineering Education

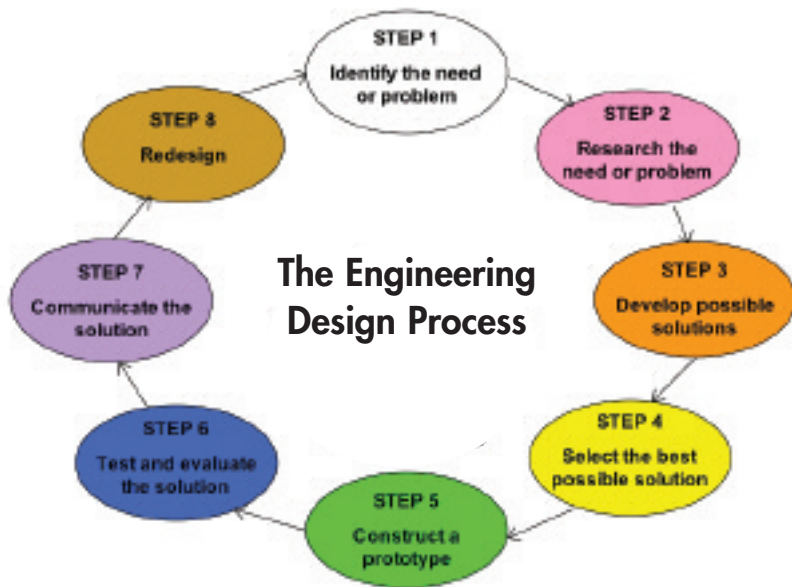
Graduate and undergraduate students from Worcester Polytechnic Institute (WPI) help teachers in the Worcester Public Schools (WPS) incorporate engineering into their curriculum.

This project is funded by a grant from the National Science Foundation.



The University of
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PIEE K-6



The Engineering Design Process is the foundation of the work done by WPI students who create lesson plans and assist the teachers in delivering them to the WPS students. The lesson plans incorporate basic engineering concepts, and address the Massachusetts Curriculum Frameworks and the WPS Benchmarks.

Curriculum standards are set by Massachusetts Frameworks and WPS Benchmarks so that WPS students in each grade are taught the same material, at the same level. (Massachusetts Frameworks contain material that is tested in the MCAS standardized tests.)

Graduate and undergraduate WPI students participating in the program work in a single classroom for an entire school year. This allows the WPS students and teachers to develop a bond and a level of comfort with the WPI students.

Lesson Plans

Graduate and undergraduate WPI students work with the WPS teachers to develop lesson plans that are creatively meshed with the existing curriculum.

Lesson plans developed so far include

- simple machines combined to create a working bicycle
- a water-propelled rocket
- an erosion experiment

The lessons are as hands-on as possible. The WPS students record and analyze data and observations at a level that is appropriate to their grade.

Some lesson plans teach ideas that will be revisited later in the school year, or in a subsequent year. Thus, the WPS students develop building blocks for learning engineering concepts.

During the 2003–04 school year, seven graduate students, 15 undergraduates and six teachers are working together to teach basic engineering concepts to WPS students in grades 4 through 6 at Midland Street and Elm Park Community schools.



During the 2004–05 and 2005–06 school years, teachers in grades K through 3 in additional schools join the program. When the grant is over, WPI undergraduate students continue to support the teachers.