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Curriculum Units by Fellows of the National Initiative
2019 Volume IV: Energy Sciences

Prototyping a Wind Turbine and Measuring Performance

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In this unit, we are going to cover the challenges in meeting global energy consumption and the driving forces that have led to the growth of renewable energy. Specifically, this unit will cover the concept of what is energy and how can wind be transferred into a renewable source of energy. The abstract concepts in understanding electricity and magnetism will be covered through experimental discovery. A final design project to make a wind turbine will be completed.

This unit is for sophomore or junior high school students interested in pre-engineering. Students will work in teams of two or three on the experimental bench work. There will be class activities in understanding vocabulary and in verbalizing the concepts of wind and renewable energy.

The standards covered are working collaboratively, developing language skills, meeting content needs surrounding energy.

(Developed for Principles of Engineering, grades 10-11; recommended for Physics, grades 10-11)