



YALE NATIONAL INITIATIVE

to strengthen teaching in public schools®

Curriculum Units by Fellows of the National Initiative
2020 Volume IV: Solving Environmental Problems through Engineering

Engineers Wanted: Climate Change Experience Necessary!

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by Rachel Odoroff

With both weather and climate changing due to increased fossil fuel consumption, humans are facing choices at personal, local, national and international levels: reduce carbon emissions or adapt our farming, housing, transportation, our whole towns and cities to the coming reality. Using a project based approach, this unit will explore the unique challenges that Philadelphia, Pennsylvania will face in the coming years and calls upon middle school students to design a retrofitted model of their school to address those changes. Embedded in the unit is multidisciplinary learning which requires students to read graphs, analyze data, conduct scientific experiments, and to justify their design choices with written and oral responses while they imagine engineered solutions to locally based problems. This unit should be adaptable for students and teachers in other locales with minor adjustments.

(Developed for Science, grade 8; recommended for Science, grades 6-8, and Environmental Education, grades 6-12)

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