



Curriculum Units by Fellows of the National Initiative
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Math Equations of Energy

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This curriculum unit is directed to students in Algebra-1 and Algebra-2, with the analysis of data and the discovery of empirical formulas, related to solar energy. Some mathematical manipulation can be used in 6th, 7th and 8th grades, with the concepts of ratio and proportion, calculation of areas and measurement of angles.

A brief information on the ancient use of solar energy by the Incas is included. There is background information on renewable sources of energy, in search of cleaner options that will not compromise the security and health of our mother earth. Although there is not an assurance of a real clean solution, we need to balance the options and take the least damaging one.

Currently, 60% of the electricity used in the US comes from coals and 20% from nuclear energy. One can imagine the amount of waste produced by either of these two options to obtain electricity. On one hand, mining the coal leaves the land unusable, and on the other hand, a lot of waste from the result of nuclear fission is being "stored" in the same plant, which normally closes after a period of time.

This curriculum unit presents the benefits of using solar energy. Calculations related to efficiency including cost and usage of solar energy in comparison to the use of traditional electricity are as well included.

(Developed for Algebra I, grades 9-12, and Algebra II, grades 10-12; recommended for Pre-Algebra, grades 6-8; Algebra I, grades 8-9; Geometry, grades 8-10; and Algebra II, grades 8-12)

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