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Curriculum Units by Fellows of the National Initiative
2024 Volume IV: Energy: Past, Present, and Future

Brainpower: Using Math and Science to Understand Five Moments in Energy History

Guide for Curriculum Unit 24.04.02, published September 2024
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An important practice in environmental science is observing the world and asking, “How did this get here?” and “Why does it do that?” For ninth graders today, these questions could be asked of things like plants and cell phones, diesel buses and electric cars. Although seemingly very different, everything in our environment comes from a relationship between matter and energy. How do plants and cell phones get enough energy to function? How does an engine turn fuel into movement, and what is different about a chemical or electrical power source? My aim for this unit is to show that the science and mathematics of energy can be life-changing and world-changing powers. This will be accomplished by presenting five moments in energy history that changed the history of life on Earth and supporting students to research and recreate those moments through hands-on demonstrations.

(Developed for Environmental Science, grade 9; recommended for Physical Science, grades 6-8)

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