

Synopsis: Using Basic Chemistry to Study Energy Resources

Michael A. Doody

In this culminating unit, students will apply the understanding of chemistry that they have built throughout the school year to the various energy resources consumed in the United States. Working in groups, students will be assigned one of the following energy sources: coal, oil, natural gas, nuclear, biofuels, and solar. They will have access to video resources on their specific energy source, as well the Department of Energy's website on the nation's energy resources. Using this information, as well as other independently researched information, students will analyze their energy resource with regards to the chemical reactions involved, the stoichiometry and efficiency of those reactions, the compatibility of the energy resource with the current electrical grid, and the contribution of that energy source to global climate change. Upon completion of their research, students will create digital media presentations to share with the rest of the class. In addition, students will create a graphic organizer for the rest of the class to complete during their presentation. Finally, students will write an opinion paper identifying the single energy resource that the United States should invest in most heavily moving forward. Together, these assignments will count as students' final exam grades.