Fuels for the 21st Century

Common Core Standards

Anchor Standard: Reading – Key Ideas and Details

2. *Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas.*

Reading Standards for Literacy in Science and Technical Subjects (Grades 6-8):
Integration of Knowledge and Ideas

8. *Distinguish among facts, reasoned judgment based on research findings, and speculation in a text.*

Writing Standards for History, Social Studies, Science and Technical Subjects (Grades 6-8):
Research to Present and Build Knowledge

7. *Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.*

Background Activity

Read and take notes using a variety of informational texts about different sources of energy and how they are found, extracted, and made ready for people to use. Informational texts may vary and can include the grade-level textbook, Internet articles, books, newspaper and magazine articles, etc. Read informational texts about oil, natural gas, coal, and alternate energy sources such as wind or solar power. Discuss the information you have found.

SCAMPER Activity

Work in pairs using your notes from the informational texts plus creative and critical thinking to answer the SCAMPER questions. Most questions can be answered in sentence or list form. The 'Modify' question requires a diagram, and the 'Rearrange/Reverse' question requires a letter. Answers can be handwritten or written on a computer or electronic tablet.

Materials

Notes from informational texts, paper, pencil, large sheet of plain paper for diagram

Substitute

Hydraulic fracturing or "fracking" is a controversial method of extracting oil and gas from shale. Fracturing fluids usually are 90% water, 9.5% sand and 0.5% chemicals. What could be substituted for these things or for this method of extracting fuel that might be more environmentally friendly?