



A Lesson on Natural Gas: An American Treasure by Garrett Plummer

Grade Level: Grade 4

Subject Area: English Language Arts

Lesson Length: 1 hour 30 minutes

Lesson Keywords: Natural gas

Lesson Description: A quick lesson on the article Natural Gas: An American Treasure

Common Core Standards Covered with This Lesson

CCSS.ELA-Literacy.RI.4.4: Determine the meaning of general academic and domain-specific words or phrases in a text relevant to a grade 4 topic or subject area.

CCSS.ELA-Literacy.RF.4.3: Know and apply grade-level phonics and word analysis skills in decoding words.

CCSS.ELA-Literacy.W.4.1: Write opinion pieces on topics or texts, supporting a point of view with reasons and information.

CCSS.ELA-Literacy.W.4.4: Produce clear and coherent writing in which the development and organization are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1-3 above.)

CCSS.ELA-Literacy.W.4.7: Conduct short research projects that build knowledge through investigation of different aspects of a topic.

CCSS.ELA-Literacy.SL.4.1a: Come to discussions prepared, having read or studied required material; explicitly draw on that preparation and other information known about the topic to explore ideas under discussion.

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Lesson Content: Book/Story/Reading Passage

Instructions: Please read the following reading passage as many times as needed (aloud and silent) before starting to go through other lesson pages. Understanding the content of this passage is very important since the lesson activities will be all about this content. Feel free to print the passage if needed.

Natural Gas: An American Treasure

by

Content: When gas burns, it makes energy. That energy is heat. Natural gas is mostly made of three gases: methane, ethane, and propane. People have learned to use natural gas in many ways. Natural gas is great.

We use natural gas every day. When you turn on hot water, natural gas probably heated it. Just think about all the things people need to heat! Natural gas can help do that. Farms use gas-made fertilizer. So the farmers may have grown your food with that fertilizer. People even use natural gas in cars. Natural gas really is the most important resource under the ground. It is very special.

We also use natural gas to make electricity. We use coal, wind, the sun, water, and uranium to make electricity, too. But natural gas is cleaner. It does not pollute the air as much. It is also cleaner for factories and cars.

Geologists are scientists who study what the earth is made of. The search for natural gas begins with geologists. They know a lot about rocks. They know which rocks usually have gas under them. They look for those rocks so that they can begin drilling. This is like a science project. The scientists start with a guess, a hypothesis. They think they will find gas under the ground. The next step is a search. The explorers use a drill to dig deep in the ground. If they find gas, then the explorers drill deep holes and use pipes to get the gas from under the ground.

Natural gas is found in many places. It is deep beneath the surface of the earth. It is also beneath the floors of the oceans. You won't get to it if you dig a little hole. It is far down under ground. You will not find it even with a very deep hole in Chicago. It is far under the ground in other parts of this country. It is also in other countries.

How does natural gas get to people who need it? A pipeline takes the gas to them. It travels hundreds of miles. A pipeline is a set of joined pipes. It has many parts. Each part is a pipe connected to other pipes. There are more than a million miles of natural gas pipelines in the United States today. Every 50 to 100 miles along those pipelines there are stations that push the gas along. They are called compressor stations. The gas travels about 35 miles an hour. It takes a lot of work to get natural gas to homes and businesses. But it is a great resource. So it's worth all that work.

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Task 1: Vocabulary

Instructions: Please complete the following vocabulary activity by choosing the correct meaning of each word selected from the passage and use of each word correctly in a sentence.

Q: 1 WordPhrase: hypothesis **WordPhraseTier:** 2

Question: When the author says "The scientists start with a guess, a hypothesis. They think they will find gas under the ground." What is the meaning of "hypothesis" in this sentence?

- A: None of the below
- B: A prediction
- C: Calculated results
- D: A guess

Question: Which one of the choices below is a "hypothesis" about fossil fuels?

- A: Fossil Fuels are good for the enviroment
 - B: I believe fossil fuels are underneath the ground
 - C: If fossil fuels are burned, then the air around where they were burned will begin to be polluted
 - D: I think fossil fuels will be the energy of the future
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Q: 2 WordPhrase: pollute **WordPhraseTier:** 2

Question: What could the meaning of "pollute" be from the text.

- A: To contaminate with a harmful substance
- B: To sweeten with a good smelling substance
- C: To corrode with an acidic substance
- D: To freshen up with a clean substance

Question: Which substance, if burned, could pollute the air?

- A: Fetalizer
 - B: Electricity
 - C: Coal
 - D: Water
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Q: 3 WordPhrase: Geologist **WordPhraseTier:** 3

Question: Geologists are scientists who study?

- A: What the earth can't make
- B: What the earth can recycle
- C: What the earth is has on it
- D: What the earth is made of

Question: The search for natural gas begins with?

- A: Zooligists
 - B: Geologists
 - C: Hydrologists
 - D: Anthropologists
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Q: 4 WordPhrase: Electricity **WordPhraseTier:** 3

Question: Electricity can be found at all locations except?

- A: In the classroom
- B: At home
- C: A forest
- D: A hospital

Question: What are some of the ways humans make electricity?

- A: natural gases
 - B: Wind
 - C: Water
 - D: All of the above
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Task 2: Forum Discussion

Instructions: This discussion forum will have questions for students to respond. Read the posted questions, and respond to each. Students are responsible for posting one initial and and two peer responses for each topic.

1 - Your Thoughts?

After reading Natural Gas: An American Treasure, what are your thoughts on natural gases or how have they changed?

2 - Most Impactful Part

What was one sentence from Natural Gas: An American Treasure had the biggest impact on you?

3 - Natural Gases around you?

What are some examples of natural gases that can be found in your home? If you are having trouble feel free to look up other examples to assist yourself.

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Task 3: Writing Activity

Instructions: The author has gone on about natural gases yet only brings up coal, wind, the sun, water, and uranium only by mentions. Your goal is to discuss, at least, two positives and two negatives for one of the other substances used by humans to make electricity. You may look up information and you may put the link at the bottom for any website used.

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