



## A Lesson on Natural Gas: An American Treasure by Cailin Mendes

**Grade Level:** Grade 4

**Subject Area:** English Language Arts

**Lesson Length:** 1 hour 45 minutes

**Lesson Keywords:** Energy, natural gas, 4th grade lesson plan, language activity

**Lesson Description:** Students will gain basic knowledge on how natural gas is used as energy and the process through which it is obtained.

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

CCSS.ELA-Literacy.W.4.2: Write informative/explanatory texts to examine a topic and convey ideas and information clearly.

CCSS.ELA-Literacy.W.4.2c: Link ideas within categories of information using words and phrases (e.g., another, for example, also, because).

CCSS.ELA-Literacy.W.4.9: Draw evidence from literary or informational texts to support analysis, reflection, and research.

CCSS.ELA-Literacy.L.4.4a: Use context (e.g., definitions, examples, or restatements in text) as a clue to the meaning of a word or phrase.

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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:** "it is a great resource" **WordPhraseTier:** 2

**Question:** The author said "it is a great resource." What did the author mean by resource?

- A: A service provided by workers
- B: something of value taken from the Earth
- C: Money used for a project
- D: meeting the needs of others

**Question:** Choose the sentence where the word "resource" is used correctly.

- A: The gold found in the mountain was a valuable resource.
  - B: The student had a fun resource.
  - C: I put my books in the resource.
  - D: After a long resource, I went home.
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**Q: 2 WordPhrase:** Hypothesis **WordPhraseTier:** 2

**Question:** What is meant by the word hypothesis?

- A: Something scientists find in the ground
- B: A drill to find natural gas
- C: A thought or educated guess to figure something out.
- D: A lie told about the scientists.

**Question:** Use the word "hypothesis" correctly.

- A: The hypothesis was buried deep in the ocean.
  - B: The hypothesis was blue
  - C: The hypotheis was too big to fit inside my car.
  - D: My hypothesis is that it will rain today because it looks cloudy.
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**Q: 3 WordPhrase:** Pipeline **WordPhraseTier:** 2

**Question:** What is a purpose of a pipeline?

- A: A giant wave found on Earth for people to surf on.
- B: To transport objects from one place to another.
- C: To stop people from entering an area of land.
- D: To take a long time moving objects.

**Question:** In what sentence is the word pipeline used correctly?

- A: The quick way to travel was through the pipeline.
  - B: The pipeline didn't like most animals.
  - C: The pipeline was late for class.
  - D: The pipeline changed its shape.
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**Q: 4 WordPhrase:** Explorers **WordPhraseTier:** 2

**Question:** When the author says "the explorers drill" who does he mean by explorers?

- A: Scientists in the field
- B: Thrill seekers
- C: The rocks
- D: A machine

**Question:** What sentence uses the word explorer correctly?

- A: The explorer found the cat.
  - B: The explorer is a nice car.
  - C: The explorer studied the item carefully.
  - D: The explorer broke down.
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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 - Geologists are scientists that study the Earth.

Why do you think geologists can be helpful to find important resources?

2 - We use natural resources everyday

Why do you think it's important to save our resources and them wisely?

3 - Natural gas is found deep inside the Earth.

What other?items?do you think geologists might find deep inside the Earth?

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Task 3: Writing Activity

**Instructions:** Write 2 paragraphs about how you and your family use natural gas on a daily basis. ?Make sure to include examples!

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