

PART 1

UNDERSTANDING THE NATURE OF AN ISSUE

“More than 80% of American energy comes from oil, natural gas, or coal.”

OBJECTIVE:

Students apply their close reading skills to understand a societal issue as a context for various perspectives, positions, and arguments.



ACTIVITIES

1- INTRODUCING THE UNIT

The teacher presents an overview of the unit and its societal issue.

2- EXPLORING THE ISSUE

Students read and analyze a background text to develop an initial understanding of the issue.

3- DEEPENING UNDERSTANDING OF THE ISSUE

Students read and analyze a second background text to expand and deepen their understanding of the issue.

4- QUESTIONING TO REFINE UNDERSTANDING

Students develop text-dependent questions and use them to refine their analysis.

5- WRITING AN EVIDENCE-BASED CLAIM ABOUT THE NATURE OF THE ISSUE

Students develop and write an evidence-based claim about the nature of the issue.

MATERIALS:

Text Sets 1 and 2
Guiding Questions Handout
Forming EBC Tool
TCD Checklist
EBA Terms



ALIGNMENT TO CCSS

TARGETED STANDARDS:

RI.6.1: Cite textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.

RI.6.2: Determine a central idea of a text and how it is conveyed through particular details; provide a summary of the text distinct from personal opinions or judgments.

RI.6.3: Analyze in detail how a key individual, event, or idea is introduced, illustrated, and elaborated in a text (e.g., through examples or anecdotes).

W.6.2: Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.

SUPPORTING STANDARDS:

SL.6.1: Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 6 topics, texts, and issues, building on others' ideas and expressing their own clearly.

RI.6.4: Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings.



ACTIVITY 1: INTRODUCING THE UNIT

The teacher presents an overview of the unit and its societal issue.

INSTRUCTIONAL NOTES

INTRODUCE ARGUMENTATION

Introduce the central purpose of the unit: to develop, practice, and apply the skills of argumentation in the context of a societal issue by:

- 1) Understanding the nature of a challenging *issue* for which there are various *perspectives* and *positions*.
- 2) Understanding and comparing *perspectives* and *arguments* on the issue.
- 3) Developing an evidence-based *position* on the issue.
- 4) Developing, sequencing and linking *claims* as *premises* in an evidence-based *argument* for one's position.
- 5) Supporting one's premises with logical *reasoning* and relevant *evidence*.
- 6) Developing an argumentative *essay* through a series of guided editorial processes.

Emphasize that in this unit, students will learn and think about a complex societal issue for which there are many explanations, perspectives, and opinions, not simply two sides of an argument. to be debated. Let them know that they will read and research to better understand the issue and various perspectives on it *before* they form a position of their own and develop an argument in support of that position. Explain that the unit will culminate in a collaborative process for developing and strengthening an argumentative essay that each student will write on the unit's societal issue.

- Establish a clear definition of the term *issue* in general. An issue can be defined as *an important aspect of human society for which there are many differing opinions on an appropriate course of action*. Brainstorming a list of societal issues might be helpful.
- Using examples from various fields and topical areas, discuss the general question: *"How do strategic thinkers discuss and understand challenging issues or problems?"* Brainstorm a list of approaches and skills used by experts who regularly have to propose and support responses to issues or problems.

ENERGY CONSUMPTION AND PRODUCTION

The topic area and text set for this unit focuses on the broad area of energy consumption and production, and more specifically on issues and controversies related to the use of hydraulic fracturing, better known as "fracking," to access natural gas deep underground. Energy production is a topic of particular importance as energy demand and prices continue to increase along with worries over negative environmental impacts and dwindling fossil fuel sources. The issues surrounding natural gas extraction are varied, giving the unit a rich and complex context in which students can explore the different aspects of the issue, as well as argumentation. New strategies to extract the much-needed fuels, such as fracking, to support modern day living help highlight several components of the issue including economic, environmental and social problems. A "right answer" is difficult to find given the many compelling arguments for and against fracking, which allows the teacher and students to approach and study the issue from many possible angles.

FORMULATE A PROBLEM-BASED QUESTION

Formulate a problem-based question from which students can begin their discussions, reading, and development of an argumentative position. Choose or develop a general, though still focused, question that causes students to think about the problem with many directions for argumentation, and that connects to students' backgrounds and interests. An example/option for a problem-based question is:

How should the US use and supply energy? How should we balance our lifestyle needs and rising need for energy with the results and risks of finding and using energy? What role should the use of alternative sources of energy play? Who should ultimately make decisions about the use of land to source energy sources? Local people, states, big businesses, the federal government?

TEXT-BASED QUESTION

One way that you could introduce students to the topic of energy consumption and hydraulic fracturing is to show them the trailer for the movie "Promised Land." This movie was released in 2012 and stars Matt Damon and John Krasinski. This film depicts a small, rural



ACTIVITY 1: INTRODUCING THE UNIT (CONT'D)

INSTRUCTIONAL NOTES (CONT'D)

northeast town that has a large supply of natural gas below ground. A large, natural gas company sends Damon's character, a salesman for the company, to convince the town's citizens to allow drilling for the natural gas. He meets opposition as John Krasinski's character tries to convince citizens that drilling for natural gas is not worth the potential millions of dollars due to a variety of potential environmental consequences. This trailer and the movie in general demonstrate the pressures (economic, environmental, political, etc.) that many rural areas of the country face when deciding whether to allow hydraulic fracturing or other forms of drilling for fossil fuels in their community.

If the trailer is selected, it may be necessary to show students a video explaining the process of hydraulic fracturing so they have some context about the issues being discussed in the trailer for the film.

What reasons are given by both the pro-drilling and anti-drilling proponents to support their positions?

Let students know that they will be returning to these questions often as they read texts related to energy and fracking. Emphasize that their task in this argumentation unit is not simply to answer them, but rather to use them as a stimulus for reading and discussion. Thinking about these questions as they read, analyze, and discuss will eventually lead them to a perspective on fracking, and finally to a position about fracking from which they can build an evidence-based argument.

KWL

Teachers might choose to use an activity to help students access their prior knowledge of the subject while also making sure to be careful of erroneous prior conceptions of the topic (KWL, class brainstorm, image brainstorm, free write, etc.).



ACTIVITY 2: EXPLORING THE ISSUE

Students read and analyze a background text to develop an initial understanding of an issue.

INSTRUCTIONAL NOTES

READING

- Students read the text independently, annotating and making notes on how it relates to the unit's problem-based question.
- The teacher introduces one or more text-based questions to drive a closer reading of the text. Students then follow along as the text is presented to them.
- In reading teams, students discuss the text-based questions and search for relevant details, highlighting and annotating them in their text (and might use a *Forming EBC* tool to record their thinking).

- Students individually develop explanatory claims about the text's presentation of the issue (a *Forming EBC* tool can be used).
- In reading teams, students compare claims and the evidence they have found to derive and support them.

Students write a short claim-based synopsis of the text and the information it presents about the nature of the issue or problem, citing specific details and evidence to support their explanatory claim. [NOTE: Emphasize that at this point in the process, student claims should focus on interpreting what the text says about the nature of the issue, not on the validity of the text's perspective or position and *not* on articulating the student's own, still-developing position. Those sorts of claims will come later.]

WRITING CLAIMS

- The teacher models the development and writing of an explanatory claim that addresses something the text has presented about the unit's issue. The claim is explanatory not argumentative at this point.



ACTIVITY 2: EXPLORING THE ISSUE (CONT'D)

INSTRUCTIONAL NOTES (CONT'D)

NOTE ON TEXT SETS

Instruction in this unit links to a sequence of *text sets*. Each text set provides multiple entry points into the issue, giving teachers and students flexibility with respect to the time and depth with which they wish to explore the topic.

Teachers may choose to use the text sets in a variety of ways:

- Select one of the three texts for all students to read, analyze, and discuss. Provide links to the other two so that students can do additional reading if desired.
- Have all students read, analyze, and discuss all three texts (or two of the three) in a more extended instructional time sequence.
- Place students in “expert groups” and have them read and analyze one of the three texts. Then have students “jigsaw” into cross-text discussion groups to share and compare what they have learned from the text each has read. [Note: students might be grouped by reading level and assigned texts based on their complexity/difficulty.]

TEXT SET #1: TEXTUAL NOTES

Text Set I includes three texts that can be used to provide initial background information about energy, where energy comes from, and how much energy we use in the United States.

TEXT 1.1: “THE STORY OF ENERGY - WHERE DOES OUR POWER COME FROM?”

Author: Life Squared; **Source/Publisher:** lifesquared.org.uk; **Date:** September 18, 2012;

Complexity Level: NA

Text Notes: This background video from a British “not-for-profit organization helping people to live happier, wiser and more meaningful lives,” is typical of the informational sources students may encounter when doing an Internet search. It is intended to provide background information on the energy needs of Great Britain, which are very similar to those of many other developed countries including the US. The video details the process for creating energy from renewable and nonrenewable resources and provides excellent imagery to make connections between one’s individual energy uses to the larger world of energy production.

Sample Text-Dependent Questions (to drive closer reading and discussion):

1. What general issues does the video detail about the amount of energy use?
2. What are the energy demands of developed and industrialized countries like Great Britain? What are the main sources of demand?
3. What sources of energy production specifically for electricity does the video present?
4. According to the video, what is the process for creating energy?



ACTIVITY 2: EXPLORING THE ISSUE (CONT'D)

TEXT SET #1: TEXTUAL NOTES

TEXT 1.2: "HOW MUCH ENERGY DOES THE U.S. USE? AN ANIMATED GUIDE TO THE DIFFERENT ENERGY SOURCES THAT POWER OUR NATION"

Author: Alexis Madrigal; **Source/Publisher:** The Atlantic; **Date:** August 5, 2013; **Complexity Level:** NA

Text Notes: This video is part of a six-part series by The Atlantic and provides a second overview of energy and the amount the U.S. uses this year. The video explains the different sources that provide our energy: nuclear, green, coal, gas, and oil. This video reinforces the Life Squared video but speaks specifically about the United States. Students can also explore other pages within The Atlantic's series entitled "The User's Guide to Energy," which includes other videos and informational texts on energy use in the United States.

Sample Text-Dependent Questions (to drive closer reading and discussion):

1. How much energy does the United States use in a year?
2. What is a BTU? How much energy is released from one BTU?
3. What raw materials are used to make energy in the United States?
4. How does the narrator describe "the big picture" for American energy?

TEXT 1.3: "HISTORY OF ENERGY USE IN THE US"

Author: Hobart King; **Source/Publisher:** Geology.com; **Date:** NA

Complexity Level: The text measures at 1090L. The text is chunked into small sections, making it very accessible for students.

Text Notes: This Geology.com text describes multiple sources from which the United States creates energy. For each energy source, a brief history is provided detailing how the material was used in the past and how it is currently used. The source can be used as a general reference for all students as they read texts about energy sources, or students can be assigned specific types of energy, become "experts," and then share what they have learned about energy sources and their history with the rest of the class.

Sample Text-Dependent Questions (to drive closer reading and discussion):

1. For any energy source described in the text, what is stated regarding its history?
2. For any energy source described in the text, how has its use changed over time?
3. How does the text develop the relationship between energy demand or consumption, and energy production? According to the article, how does the author connect each source of energy with a specific energy demand?
4. What evidence does this text provide that influences your understanding of energy, energy sources, and energy usage in the US? In what ways?

ACTIVITY 3: DEEPENING UNDERSTANDING OF THE ISSUE

Students read and analyze a second background text to expand and deepen their understanding of the issue.

INSTRUCTIONAL NOTES

READING

- Students read the text independently, annotating and making notes on how it relates to the unit's problem-based question.
- The teacher introduces one or more text-based questions to drive a closer reading of the text. Students then follow along as the text is presented to them.
- In reading teams, students discuss the text-based questions and search for relevant details, highlighting and annotating them in their text (and might use a *Forming EBC* tool to record their thinking).

WRITING CLAIMS

- The teacher models the development and writing of an explanatory claim that addresses something the

text has presented about the unit's issue. The claim is explanatory not argumentative at this point.

- Students individually develop explanatory claims about the text's presentation of the issue (a *Forming EBC* tool can be used).
- In reading teams, students compare claims and the evidence they have found to derive and support them.

Students write a short claim-based synopsis of the text and the information it presents about the nature of the issue or problem, citing specific details and evidence to support their explanatory claim. [NOTE: Emphasize that at this point in the process, student claims should focus on interpreting what the text says about the nature of the issue, not on the validity of the text's perspective or position and *not* on articulating the student's own, still-developing position. Those sorts of claims will come later.]

TEXT SET #2: TEXTUAL NOTES

Text Set #2 includes three texts that can be used to provide additional background information about energy, alternative forms of energy, and an introduction into hydraulic fracturing.

TEXT 2.1: "ENERGY AND THE ENVIRONMENT"

Author/Source/Publisher: US Energy Information Administration; **Date:** NA

Complexity Level: This article, from Energy Kids, a US Energy Information Administration site for kids, measures at 1070L and should be readable for most students .

Text Notes: This site allows students to read about renewable, nonrenewable, and secondary energy sources. Students could be assigned to read one or several from each category or be given reign to select those they want to read about. Each topic provides information about the source, how it is gathered, and how people use the energy source.

Sample Text-Dependent Questions (to drive closer reading and discussion):

1. For any of the selected sources of energy, how is it used to make energy?
2. For any of the selected sources of energy, what is its effect on the environment?
3. What do the groups of energy sources (nonrenewable, renewable, secondary) have in common? In what ways do they differ from one another?
4. What evidence does this text provide that influences your understanding of energy, energy sources, and energy usage in the US? In what ways?

ACTIVITY 3: DEEPENING UNDERSTANDING OF THE ISSUE (CONT'D)

TEXT SET #2: TEXTUAL NOTES

TEXT 2.2: "NONRENEWABLE ENERGY"

Author/Source/Publisher: Solarschools.net; **Date:** NA

Complexity Level: This text measure 1010L and should be accessible to 6th graders.

Text Notes: This text explains how fossil fuels are formed over the course of millions of years. It is also the first text that begins to explain that there are pros and cons of using fossil fuels. Here, the author merely states a few basic claims for both sides of the topic. Note that all facts and figures relate to Australia.

Sample Text-Dependent Questions (to drive closer reading and discussion):

1. In the first paragraph, how does the author explain the process used to create fossil fuels in the ground?
2. What does the article explain are the major advantages and disadvantages of using fossil fuels for energy?
3. The author writes that, "fossil fuels are non-renewable and will eventually run out because we are using them much faster than they can be restored within the earth." What is the meaning of "restored" in this sentence and how does it help you understand the definition and meaning of "non-renewable"? What evidence does the author provide to support this claim?
4. What evidence does this text provide that influences your understanding of energy, energy sources, and energy usage? In what ways?

TEXT 2.3: "ONE FRACKING MINUTE: AN ANIMATED EXPLAINER ON HYDRAULIC FRACTURING"

Authors: Scott Tong and Matt Berger; **Source/Publisher:** Marketplace.org; **Date:** December 7, 2012

Complexity Level: The text measures at 850L and is very readable for sixth grade students.

TEXT 2.4: "BREAKING FUEL FROM ROCK"

Authors: Illustrations by Stephen Rountree, design by Stefan Estrada;

Source/Publisher: National Geographic; **Date:** NA; **Complexity Level:** NA.

Text Notes: Texts 2.3 and 2.4 are animations that explain a new, controversial process for harvesting natural gas trapped in layers of rock, called shale, deep in the ground. These two texts mostly describe the process, although text 2.3 hints at some of the controversy surrounding the process. Students will explore this topic much deeper in texts later on in the unit. The purpose of including these texts here is for students to gain an initial understanding of the process of hydraulic fracturing or "fracking."

Sample Text-Dependent Questions (to drive closer reading and discussion):

1. What kind of energy source is extracted by using the process known as "hydraulic fracturing"?
2. The process of "hydraulic fracturing" is most commonly known as "fracking." According to the article, where does the term "fracking" come from?
3. What is the most controversial component of the hydraulic fracturing?
4. What "boom" are the author's talking about in the first paragraph? How is this "boom" linked to the term "Petro State"?
5. According to the National Geographic illustrated text, what makes hydraulic fracturing different from traditional methods to extract natural gas? In this method, where is the natural gas found?
6. What effect does the "high pressure fluid mixture" have on the shale?
7. What issue do the authors point out in slide 3?
8. What evidence do these texts provide that influences your understanding of energy, energy sources, and energy usage? In what ways?

ACTIVITY 4: QUESTIONING TO REFINE UNDERSTANDING

Students develop text-dependent questions and use them to find additional evidence and further refine their claims.

INSTRUCTIONAL NOTES

QUESTIONING TEXTS

Students now apply skills they have developed in a *Reading Closely for Textual Details* unit to frame their own, more focused questions about the issue and texts. They use these questions to drive a deeper reading of the previous texts, or of additional texts providing background and perspectives on the topic.

- Starting from the unit's problem-based question, students work in reading teams to develop a set of more focused, text-based questions to drive further inquiry into the issue. (Students can use the *Reading Closely for Details: Guiding Questions* handout to help them develop their questions.)
- Individually, students use these new questions to re-read one of the two background texts, find additional details, and further refine their explanatory claim.
- If additional background information is necessary or desired, students then use their question sets to drive close reading and analysis of one or more additional texts. (Note: Suggested texts are listed in the Instructional Notes or may be identified by the teacher or found by the students. Students might work in teams to become "experts" and develop explanatory claims about one or more of these additional texts, then "jigsaw" into new groups and share what they have learned. In this way, all students can become familiar with a wider range of background texts.)
- Students write or revise one or more explanatory claim(s) based on additional evidence they have found through further or deeper reading.

TEXTUAL NOTES

ADDITIONAL BACKGROUND TEXTS

To expand their understanding of the topic, students might be assigned any of the texts from Text Sets #1 and #2 that have not been read by the class. They might also access other sources found by the teacher (or by students themselves) or the six additional source texts listed in the unit plan.

Those six listed source texts provide additional, and different, information about energy, energy sources, and energy usage in the U.S., and can be used to expand students' understanding and/or as independent reading/research assignments. Many of these texts are written at a lower Lexile level, and so could be utilized by a variety of students. Some of these additional background texts can be accessed using Grolier Online and may require a log in account. "Natural Gas" and "Alternative Energy" both can be accessed using Grolier Online and provide simple but comprehensive looks at natural gas and other alternative forms of energy. "Fracking Fury" provides a good overview of hydraulic fracturing with a focus on pros and cons.

"Energy Resources" is a highly accessible text from Geography for Kids that can be used as a substitute for one of the texts in Text Set 1. "Natural Gas Basics" is another page from the Energy Information Administration for Kids site that has numerous links to great resources that could be used during this unit. "Natural Gas Usage" is produced by the Marcellus Shale Coalition, a group that supports hydraulic fracturing in the northeast. The video on this page is short and explains the many uses of natural gas in the United States and is a nice lead-in to text set 3-4.

ACTIVITY 5: WRITING AN EBC ABOUT THE NATURE OF THE ISSUE

Students develop and write an evidence-based claim about the nature of the issue.

INSTRUCTIONAL NOTES

In the culminating activity for Part 1, students now develop a synthesis claim about the nature of the issue that they will expand and revise when drafting their final argument. Before they can take a position and make their case for a response, they must be able to use evidence to explain their understanding of the issue or problem.

- The teacher models the development of an evidence-based claim that synthesizes information from multiple sources and presents the writer's understanding the unit's issue.
- In reading teams, students go back to the background texts to find additional evidence/details that support this synthesis claim. (An *Organizing EBC* tool can be used).
- In reading teams, students review the explanatory claims they wrote about each text.
- In reading teams, students brainstorm alternative ways of viewing or understanding the problem, based on evidence from the background texts.
- Individually, students develop a multi-part claim that synthesizes how they have come (so far) to view and understand the nature of the issue and its components. (An *Organizing EBC* tool can be used).
- In reading teams, students compare their synthesis claims and the evidence that supports them.
- If teachers and students are familiar with the *Evidence-Based Claims Criteria Checklist* and the *Text-Centered Discussion Checklist* from work in previous units, students can use them as criteria for evaluating their claims and reflecting on their discussions and participation in their reading teams.
- As a class, return to the unit's problem-based question to consider revising it based on the emerging understanding of the issue.

ASSESSMENT OPPORTUNITIES

As a formative assessment, and a building block for their final argument, in Activity 5, students draft a written, multi-part claim that:

1. Synthesizes what they have learned about the nature of the unit's issue.
2. Presents their current way of understanding the issue and its components.
3. Cites evidence from multiple sources that explains and substantiates their perspective.
4. Represents their best thinking and clearest writing.

Teachers can use an *EBC Criteria Checklist* to evaluate student writing as well as each student's initial comprehension of the background texts and understanding of the issue.