



# Close reading plan

Cold House, Hot House, Green House by Emily Sohn

Created by **Diana Kloskowski**, 2014 Connecticut Dream Team teacher

## What makes this text complex?

<b>Text and Author</b>	Cold House, Hot House, Green House by Emily Sohn October 12,2004	<b>Where to Access Text</b>	<a href="https://student.societyforscience.org/article/cold-house-hot-house-green-house">https://student.societyforscience.org/article/cold-house-hot-house-green-house</a>
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## Text Description

### Technology and Engineering Science Article

Author discusses sources of pollution into the environment, energy consumption in the united states, and describes movement toward “green building” as a solution to increasing energy consumption.

This article is appropriate to get students thinking about how to they can positively contribute to using energy more efficiently. The author first poses the effects on the environment caused by increasing energy consumption in the United States. The history of energy consumption is communicated at the beginning of the article and then moves on to addressing solutions that can reduce the consumption of energy in the manor of engineering and architectural design. The author lists new methods of building and organizing developments that support efficient energy use. In closing the article provides student with a data table that communicates energy use trends over the past three decades. Students are able to analyze patterns within quantitative data and infer possible increasing energy consumption if changes are not made to the how the American population used energy.

### **HS-ESS3-2.**

Evaluate competing design solutions for developing, managing, and utilizing energy and mineral resources based on cost-benefit ratios.

### **HS-ESS3-4.**

Evaluate or refine a technological solution that reduces impacts of human activities on natural systems.

### **HS-ESS3-5.**

Analyze geoscience data and the results from global climate models to make an evidence-based forecast of the current rate of global or regional climate change and associated future impacts to Earth system.

## **Constructing Explanations and Designing Solutions**

- Design or refine a solution to a complex real-world problem, based on scientific knowledge, student-generated sources of evidence, prioritized criteria, and tradeoff considerations. (HS-ESS3-4)

## **Natural Resources**

- All forms of energy production and other resource extraction have associated economic, social, environmental, and geopolitical costs and risks as well as benefits. New technologies and social regulations can change the balance of these factors. (HS-ESS3-2)

## **Human Impacts on Earth**

- Scientists and engineers can make major contributions by developing technologies that produce less pollution and waste and that preclude ecosystem degradation. (HS-ESS3-4)

## **Stability and Change**

- Feedback (negative or positive) can stabilize or destabilize a system. (HS-ESS3-4)

## **Influence of Engineering, Technology,**

## And Science on Society and the Natural World

- Engineers continuously modify these technological systems by applying scientific knowledge and engineering design practices to increase benefits while decreasing costs and risks. (HS-ESS3-2), (HS-ESS3-4)
- Analysis of costs and benefits is a critical aspect of decisions about technology. (HS-ESS3-2)

## Engaging in an Argument from Evidence

Evaluate competing design solutions to a real-world problem based on scientific ideas and principles, empirical evidence, and logical arguments regarding relevant factors (e.g. economic, societal, environmental, ethical considerations). (HS-ESS3-2)

## Developing Possible Solutions

When evaluating solutions, it is important to take into account a range of constraints, including cost, safety, reliability, and aesthetics, and to consider social, cultural, and environmental impacts. (Secondary to HS-ESS3-2), (secondary HSEE3-4)

## Common Core State Standards Connections:

**RST.9-10.1** Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account. (HS-ESS3-2), (HS-ESS3-4)

**RST.9-10.5** Analyze how a text uses structure to emphasize key points or advance an explanation or analysis. (HS-ESS3-4)

**RST.9-10.7** Integrate quantitative or technical analysis (e.g. charts, research data) with qualitative analysis in print or digital text. (HS-ESS3-5)

## Mathematics –

**MP.2** Reason abstractly and quantitatively. (MS-ESS3-2), (HS-ESS-4)

**HSN-Q.A.1** Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays. (HS-ESS3-4)

**HSN-Q.A.3** Define appropriate quantities for the purpose of descriptive modeling. (HS-ESS3-4)

**HSN-Q.A.3** Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. (HS-ESS3-4)

### Quantitative

<b>Lexile and Grade Level</b>	910-970, grades 8-10	<b>Text Length</b>	1661 words
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Qualitative	
Meaning/Central Ideas	Text Structure/Organization
<p>Notes about the meaning and central idea(s) in the text as appropriate to your grade level.</p> <ul style="list-style-type: none"> <li>Increased energy consumption results in pollution being released into the air and has impact on the environment.</li> <li>Application of efficient energy use will decrease fossil fuel prices and costs.</li> <li>Solution to inefficient use of energy is “green building”</li> </ul>	<p>Notes about important aspects of the text’s structure or organization, as appropriate to your grade level.</p> <ul style="list-style-type: none"> <li>Text used headings to classify solutions to inefficient use of energy in the country.</li> <li>Visual text provides reader with perception of green building design.</li> </ul>
Prior Knowledge Demands	Language Features
<p>Notes about the major prior knowledge demands or experiences required for student to comprehend this text.</p> <ul style="list-style-type: none"> <li>Knowledge of fossil fuels</li> <li>Fossil fuels are used to create electricity which leads to pollution into the environment</li> <li>Experimental process</li> </ul>	<p>Notes about the significant language features such as vocabulary or mechanics.</p> <ul style="list-style-type: none"> <li>Controversial and informative</li> <li>Easy to read</li> <li>Discipline-specific vocabulary and principles.</li> </ul>
Vocabulary	
Tier Two Words (General academic vocabulary)	Tier Three Words (Domain-specific words)
<p><i>“Words that are far more likely to appear in written texts than in speech. [They] often represent subtle or precise ways to say relatively simple things—saunter instead of walk, for example.” (CCSS ELA Appendix A)</i></p> <ul style="list-style-type: none"> <li>Dwell</li> <li>Spews</li> <li>Wafts</li> <li>Nuclear energy</li> </ul>	<p><i>“[Tier Three words]...are specific to a domain or field of study (lava, carburetor, legislature, circumference, aorta) and key to understanding a new concept within a text.” (CCSS ELA Appendix A)</i></p> <ul style="list-style-type: none"> <li>Sustainable</li> <li>Sustainable architecture</li> <li>Net-Zero-Energy</li> <li>Energy Efficiency</li> </ul>
Potential Reader/Task Challenges	
<p>Notes about anticipated challenges to reader as appropriate to your grade level.</p> <ul style="list-style-type: none"> <li>Address misconceptions “Buildings consume more energy than any other economic category, including transportation and industry”, students normally it is the revers and “Only about a third of the energy generated at a power plant makes its way to a house”, students will think almost 100 % of energy produce will make it to a house.</li> <li>Research potential sustainable materials that increase energy efficiency of a building or home.</li> </ul>	

Text-dependent questions		
Question	Standard alignment	Page of this document
<p>TDQ #1 Use the text to describe some of the solutions engineers and architects are designing to address reducing energy consumption.</p>	RST.9.10-1	#7
<p>TDQ #2 Based on the paragraph at the end of the article infer how much more energy use would increase in the United States if people do not make changes the way they use energy with buildings and home</p>	RST-9.10-7	# 10
<p>TDQ #3 Describe how the images in the article help you understand the themes under each topic heading in the article.</p>	RST 9.10-7	#13
<p>TDQ #4 How does the author structure the article, so that each topic demonstrates fluency throughout the text?</p>	RST 9.10-5	#18
<p>TDQ #5 When bringing all the themes identified under each topic headings within the article together how does text structure support the authors' purpose?</p>	RST 9.10-5	#21
Target Standards		
<ul style="list-style-type: none"> <li>• RST-9.10-1</li> <li>• RST-9.10-5</li> <li>• RST-9.10-7</li> </ul>		

### Question 1

<b>Question #1</b>	TDQ #1. Use the text to describe some of the solutions engineers and architects are designing to address reducing energy consumption.	
<b>Standard(s) covered:</b>	RST. 9.10-1 Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.	
<b>Example response that meets standard</b>		<b>Look-for</b>
<p>Solutions engineers and architects are designing to address reducing energy consumption are looking for new ways to design buildings in a manner that is less wasteful. The text describes improving on construction of insulation, windows, sustainable materials, and the arrangement. (Response can include various examples used in the text) The improvements in engineering and architectural design listed in the article support the attempt to reduce energy consumption in the United States.</p>		<ul style="list-style-type: none"> <li>• Restatement of the question in the form of a complete sentence.</li> <li>• Answer to the question includes words, phrases, and clauses that connect to problem. (Pollution, energy efficiency, conserve, sustainable resources, fossil fuels)</li> <li>• Cite evidence or provides an example from the text that the author uses to answer the topic question (80% of energy production goes to the heating and cooling of building structures changes in their design such as using sustainable resources and position of structures can led to more efficient use of energy)</li> <li>• Provides a concluding statement that follows to support the problem. (Keep thermostat at a lower temperature, closing windows in colder months, etc. are always to help solve the issue of energy use in the country)</li> </ul>
<b>If students are struggling to answer the text-dependent question, use this follow-up plan for modeling and practice:</b>		
<b>Objective</b>	In this lesson you will learn by citing specific textual evidence that supports the problem identified in the article by identifying the problem and solutions.	
<b>Prior knowledge to review</b>	<ul style="list-style-type: none"> <li>• Define fossil fuels are and what they are used for.</li> <li>• Forms of pollution cause my use of non-renewable resources.</li> <li>• Environmental issues that are impacted by the burning of fossil fuels.</li> <li>• RST. 6. 8-1 Cite specific textual evidence to support analysis of science and technical texts.</li> </ul>	
<b>Steps to achieve objective</b>	<b>Think aloud for direct instruction</b>	

<p>1) Identify the problem that the author describes.</p>	<ul style="list-style-type: none"> <li>• Determine the problem in the article.</li> <li>• How do you know what is wrong based on the words or phrases that the author is using?</li> <li>• Explain how does the author describes pollution.</li> <li>• What is causing the problem the author is suggesting when she suggests” the way you heat or cool your home has a big effect on the Earth...nearly every type of energy source dumps waste or spews pollution into the air”?</li> </ul>
<p>2) Go into the article, collect 2-3 solutions and provide an example or description of each.</p>	<ul style="list-style-type: none"> <li>• Identify possible solutions to the problem in the article.</li> <li>• Solutions are outlined in the 4<sup>th</sup> paragraph</li> <li>• The author describes four general methods to construct buildings that are more energy efficient</li> <li>• Give a specific example that elaborates on one of these general descriptions.</li> </ul>
<p>3) Explain how each solution addresses the problem outlined in the article.</p>	<ul style="list-style-type: none"> <li>• Connect your answer the question.</li> <li>• Restate the problem identified at the beginning of the question.</li> <li>• Connect the solutions stated to the problem.</li> </ul>

### Extension and practice

- Students who need more practice citing textual evidence will reread article. Article will be chunked so students can easily refer structured text in topic areas. Students will then sequence and order each topic heading into a time line format. Using the visual students will be able to construct a response that outlines key points found throughout the article that address engineering and architectural design toward lowering energy consumption, while leaving out information that does not address the question.
- Students will fold a piece of paper in half and label one side problem and the other side solution. Students will go back through article and identify the problem (increased energy consumption) and then identify possible solutions. Students can take solutions column and classify the solutions into three categories that outlines what engineers, architects, and people can do to reduce energy consumption. Students can take the engineer and architect category to construct a response.
- Student who are proficient at citing textual evidence can write a multi paragraph response that communicates there stance on energy consumption and elaborate on the authors descriptions of engineer and architect design using additional informational text or research.

What next?

For additional practice, with students or for students' independent work, apply this learning objective and set of steps to (name type of text and skill/standard)

See more examples of how to teach (name skill and standard)

Objective: In this lesson you will learn by citing specific textual evidence that supports the problem identified in the article by identifying the problem and solutions.

1. Identify the problem that the author describes and ask yourself "What is the problem the author is describing in the article?"
2. Go into the article, collect 2-3 solutions and provide an example or description of each.
3. Explain how each solution addresses the problem outlined in the article.

**Question 2**

<b>Question #2</b>	TDQ #2 Based on the graph entitled Energy Facts on page 7 of the article analyze how much more energy use would increase in the United States if people do not make changes to the way they use energy with buildings and home.
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<b>Standard(s) covered:</b>	<b>RST. 9-10.7</b> Translate quantitative or technical information expressed in words in a text into visual form (e.g., a table or chart) and translate information expressed visually or mathematically (e.g., in an equation) into words.
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<b>Example response that meets standard</b>	<b>Look-for</b>
<p>The graph on page 7 of the article measures the increase in the use of fossil fuel, nuclear power, and renewable energy in the United States starting from 1982 to 2002. In 1982 energy consumption totaled 73.16 Btu, in 1992 energy consumption totaled 85.91, and in 2002 energy consumption totaled 98.20 Btu. For three decades energy consumption increased at least by 12 Btu. In analyzing the data a hypothesis that I can write that outlines the relationship between variables is, If time increases then the amount of energy consumption will increase. I can infer based on specific numeric data that energy consumption will continue to increase every ten years by at least 12 Btu if people in the United States do not make changes to the way they use energy in buildings and homes.</p>	<ul style="list-style-type: none"> <li>• Restatement of the question in the form of a complete sentence.</li> <li>• References sources of energy production in the United States in the form of fossil fuel, nuclear power, and renewable energy.</li> <li>• Qualitatively analyzes quantitative data in the form of a written response that address all variables such as time and energy source.</li> <li>• Qualitative description of quantitative data that reveals numeric pattern in collected statistics.</li> <li>• Infer future outcome based on three decades of energy consumption using experimental variables and numeric patterns to support a conclusion.</li> </ul>

**If students are struggling to answer the text-dependent question, use this follow-up plan for modeling and practice:**

<b>Objective</b>	In this lesson you will learn by translating quantitative or technical information from a data table into a qualitative analysis that describes the relationship between experimental variables composed in a written response.
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<b>Prior knowledge to review</b>	<ul style="list-style-type: none"> <li>• Differentiate between quantitative data vs. qualitative data</li> <li>• Math operations in order to describe patterns in quantitative data.</li> <li>• Translation of quantitative data to qualitative form that is verbal or written</li> <li>• Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g. in a flowchart, diagram, model, graph, or table).</li> <li>• RST. 6. 8-7 Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).</li> </ul>
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Steps to achieve objective	Think aloud for direct instruction
1) Determine how the data table is organized.	<ul style="list-style-type: none"> <li>• What is the data table telling me? Years and sources of energy.</li> <li>• Over how much time? Every ten years</li> <li>• What are the sources of energy? Fossil fuel, nuclear power, and renewable energy.</li> </ul>
2) Identify the relationship between experimental variables based in quantitative data by constructing a hypothesis.	<ul style="list-style-type: none"> <li>• What are the variables? Time every ten years is the independent variable, source of energy is the constant variable, and amount of energy consumed is the dependent variable.</li> <li>• Ok now determine the relationship. How? Now use the hypothesis format “ IF...(plug in independent variable) (increases/decreases), THEN...(plug in dependent variable) will (increase/ decrease)</li> <li>• Now based on the data the hypothesis I came up with is: If time increases then the amount of energy consumption will increase.</li> <li>• State the relationships between time and the amount of energy consumption.</li> </ul>
3) Identify numeric patterns between experimental variables.	<ul style="list-style-type: none"> <li>• Now that you know the relationship between the experimental variable, take a closer look at how much the variables are affected by each other.</li> <li>• Do you need to look at each energy source in isolation? No, focus on the <b>total</b> energy used for each year, 1982, 1992, and 2002.</li> <li>• How much did energy consumption increase from 1982 to 1992? Now I’m going to have to subtract. It’s about 12 Btu.</li> <li>• How much did energy consumption increase from 1992 to 2002? Now I’m going to have to subtract again. It’s about 12 Btu maybe a little bit more, but not much more.</li> </ul>
4) Draw an inference that uses information from the quantitative data	<ul style="list-style-type: none"> <li>• Now that you did the math guess what will happen by 2012 then again in 2022.</li> <li>• How do you know, restate the data as support and elaborate on the increases in energy consumption in the past thirty year, by at least 12 Btu with each decade from 1982 to 2012.</li> <li>• How is this a problem? Pollution and the U.S. become more dependent on foreign energy resources.</li> </ul>

### Extension and practice

- Students who need more practice integrating quantitative or technical analysis with qualitative analysis in the form of a written response will use mathematics and computation to recognize physical variables and their relationships. Students will carry out a simulation that models the increasing consumption of energy. Based on other models they use physical manipulatives to account for quantitative data found in the data table found at the end of the article. Students can use mathematical operations to visually identify patterns. Students can then construct a response that addresses the TDQ.
- Students who are proficient at constructing a response to the TDQ can elaborate on the data table found at the end of the article. They can calculate the energy consumption in the United States for years 2012, 2022, etc. if Americans do not change their energy using habits. Students can construct a response that explains their data and reasoning using evidence from the article.

### What next?

For additional practice, with students or for students' independent work, apply this learning objective and set of steps to (name type of text and skill/standard)

See more examples of how to teach (name skill and standard)

Objective: In this lesson you will learn by translating quantitative or technical information from a data table into a qualitative analysis that describes the relationship between experimental variables composed in a written response.

1. Determine how the data table is organized.
2. Identify the relationship between experimental variables based in quantitative data by constructing a hypothesis.
3. Identify numeric patterns between experimental variables.
4. Draw an inference that uses information from the quantitative data

**Question 3**

<b>Question #3</b>	TDQ #3 Describe how the images in the article help you understand the central idea under each topic sub headings in the article.	
<b>Standard(s) covered:</b>	RST. 9.10-7 Translate quantitative or technical information expressed in words in a text into visual form (e.g., a table or chart) and translate information expressed visually or mathematically (e.g., in an equation) into words.	
<b>Example response that meets standard</b>		<b>Look-for</b>
<p>The images in the article support the topics that are covered throughout the article. They are aligned to parallel the sequence of events and provide the reader with a visual reference that elaborates on the themes found in the article. For example on page one of the article the author states “Buildings have a huge impact on the environment. There are more than 81 million buildings in the United States, according to the U.S. department of Energy. Buildings consume more energy than any other economic category, including transportation and industry” (Sohn 2). The image that goes along with this statement is of a highly populated neighborhood that spans as far as the eye can see, with what appears to be many homes, schools, roads, and industrial buildings. This image supports the author’s statement because it provides the reader an idea of how much energy is consumed to heat, cool, and maintain buildings across the country. Many of the images in the article support the author’s key points that address distribution of energy, alternate energy sources, alternative engineering and design of energy saving structures.</p>		<ul style="list-style-type: none"> <li>• Restatement of the question in the form of a complete sentence.</li> <li>• Purpose of images and how they help the reader understand key points and topics throughout the article.</li> <li>• Reader provides an example from the article of an image, ties it to a written statement made by the author, and elaborates on how the images deepen their understanding of the topic.</li> <li>• Cites and quotes author text.</li> <li>• Description of the image in order to specify the focus of their response and key subjects with in the image that support the authors key points, such as highly populated neighborhoods, power lines, wind mills, solar cells on roofs, new wall, and window design that save on energy use.</li> <li>• Reference of other images found in the article that support distribution of energy, alternate energy sources, alternative engineering and design of energy saving structures.</li> </ul>
<b>If students are struggling to answer the text-dependent question, use this follow-up plan for modeling and practice:</b>		
<b>Objective</b>	In this lesson you will learn by translating the meaning of sequenced visual text found in the article and describe how it supports the meaning of the author’s written text.	

<p><b>Prior knowledge to review</b></p>	<ul style="list-style-type: none"> <li>• Energy is used to heat and cool building structures. Which leads to forms pollution.</li> <li>• Methods to reduce ecological footprint on the environment, concerning natural resource consumption, recycling, and eco-friendly building materials.</li> <li>• Incentives to reduce natural resource consumption.</li> <li>• RST. 6. 8-7 Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).</li> </ul>
<p><b>Steps to achieve objective</b></p>	<p><b>Think aloud for direct instruction</b></p>
<p>1. Observe the images that are found throughout the article.</p>	<ul style="list-style-type: none"> <li>• Skim through entire article. What pictures do you see? There is a picture of a highly populated area, power lines, windmill, roofs, windows, and a weird looking house.</li> <li>• Now read what the author is talking about. The author is taking about challenges to control temperature in buildings, construction of building structures that reduce energy consumption, green building, engineering, and architectural design.</li> <li>• Identify the topic that is connected to the image.</li> <li>• How are they related? Do the images match to the topics in each portion of the article?</li> </ul>
<p>2. Read captions to clarify the subjects in the pictures.</p>	<ul style="list-style-type: none"> <li>• Identify any additional information that can help you understand what you are looking at in each image.</li> <li>• Read the captions that go along with each picture.</li> <li>• Does the caption connect to the image?</li> <li>• Does it help me better understand each image and topic?</li> </ul>
<p>3) Use an example of an image from the article and connect it to the written text in the section of the article that it is found.</p>	<ul style="list-style-type: none"> <li>• Take an inventory of all the images and captions found in the article.</li> <li>• What are the topics of each portion of the article that includes an image? (Examples include: modifications to engineer and architectural design, temperature control, arrangement of living spaces, and zero energy)</li> <li>• Choose an example to include in my response.</li> <li>• Focus on an image with in the article, read the text that goes along with it. Determine if they match.</li> <li>• Explain how each image helps the reader connect to the written text and topics.</li> </ul>

### Extension and practice

- Student who need more practice translating quantitative or technical information expressed in words in a text into visual form and translating information expressed visually or mathematically into words will construct a flow chart that describes the images in the article and connects them to the topics discussed by the author with in the text in the sequence they appear. (See attached flow chart). Students can then use the flow chart to explain how each sequenced topic help build understanding of reducing energy consumption.
- Students who need more practice will fold a sheet of paper in half. One column will be labeled picture and the second column will be labeled text. The student will draw their own version of the image and connect the description of the text that goes along with the image.
- Student who are proficient can research additional images or articles that elaborate on the existing topics found in the article. Topics covered are temperature control, green building, and engineering and architectural design.

### What next?

For additional practice, with students or for students' independent work, apply this learning objective and set of steps to (name type of text and skill/standard)

See more examples of how to teach (name skill and standard)

Objective: In this lesson you will learn by translating the meaning of sequenced visual text found in the article and describe how it supports the meaning of the author's written text.

1. Observe the images that are found throughout the article.
2. Read captions to clarify the subjects in the pictures.
3. Use an example of an image form the article and connect it to the written text in the section of the article that it is found.
4. Use an example of an image form the article and connect it to the written text in the section of the article that it is found.

# Flow Chart

Directions: Using the article put the sequence of topic or events in order.  
First

Image	Central Idea
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Second

Image	Central Idea
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Third

Image	Central Idea
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Fourth

Image	Central Idea
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**Question 4**

<b>Question #4</b>	TDQ #4 How does the author structure the article, so that each topic demonstrates a relationship between concepts in the text?
<b>Standard(s) covered:</b>	RST. 9.10-5 Analyze the structure of the relationships among concepts in a text, including relationships among key terms. (E.g. force, friction, reaction force, energy).

<b>Example response that meets standard</b>	<b>Look-for</b>
<p>The author structures the article first by introducing how the United States is currently using resources to produce energy and the effects it has on the environment. After the introduction the author focuses the rest of the article on the advances that are being made to decrease energy consumption. For example, under the heading “Windows, Walls, and Roofs” the author discusses how newly design building structures can use different materials that are able to insulate buildings better without increasing energy use for heating and cooling. Then next heading “Living Spaces”, goes on to elaborate on how building can be positioned on land in order to conserve energy. Every topic following the prior topic supports advances in engineering and architecture design concerning finding solutions that can resolve the issue of increasing energy consumption in the United States.</p>	<ul style="list-style-type: none"> <li>• Reference to the advances that are being made to decrease energy consumption in the country (temperature control, engineering design, architectural design, and green building).</li> <li>• Example of how topics build on each other to address increased energy use.</li> <li>• Suggests how window, wall, and roof design build on the topic of where buildings are spaced and organized on land as methods to decrease energy consumption.</li> </ul>

**If students are struggling to answer the text-dependent question, use this follow-up plan for modeling and practice:**

<b>Objective</b>	In this lesson you will learn to analyze the structure of the article by determining the relationships between concepts using key terms and principles.
<b>Prior knowledge to review</b>	<ul style="list-style-type: none"> <li>• RST. 6.8-5 analyzes the structure an author uses to organize a text, including how the major sections contribute to the whole and to an understanding of the topic.</li> </ul>
<b>Steps to achieve objective</b>	<b>Think aloud for direct instruction</b>
1) Identify the topic described by the author under each sub heading in the article.	<ul style="list-style-type: none"> <li>• Skim / reread the article and ask yourself: What problem is the author addressing?</li> <li>• Take a look at the images in the article and read captions to clarify the central idea of the text.</li> <li>• Read the conclusion to confirm the overall central idea of the article. (Central idea is, energy consumption in the United States and there are methods to reduce it by adopting strategies such as using alternate materials to construct buildings, using alternate energy sources, and organizing structures.</li> </ul>

<p>2) Explain how each topic heading relates to one another?</p>	<ul style="list-style-type: none"> <li>• Look at each sub heading of the article.</li> <li>• What is the topic for each section of the text?</li> <li>• Put each section of the text in the sequence they appear in the authors writing.</li> </ul>
<p>3) Provide an example that elaborates on how each topic heading relates to one another.</p>	<ul style="list-style-type: none"> <li>• Start by looking at the first sub heading, reread the text, and take notes or highlight key points. What is the topic? (Temperature Control)</li> <li>• Look at the second sub heading, reread the text, and take notes or highlight key points. What is the topic? (Windows, Walls, and Roofs)</li> <li>• Describe how sub headings “Temperature Control” and “Windows, Walls, and Roofs” relate and build on the prior topic discussed by the author to address increased energy use in the United States.</li> <li>• Your response can look like this: Temperature control describes various environments and geographic areas that can cost more or less to maintain building temperatures at are suitable for people. For example it costs more money and takes more energy to cool a school building located in a Texas year round compared to cooling a school building located in Connecticut. The following sub heading is “Windows, walls, and roofs” it goes on to describe effective methods to design these building structures in a manner that decreases energy consumption by using specialized materials for insulations or adding glazes to the surface of window glass. The subheading “temperature Control” and “Windows, Walls, and Roofs” build on each other because the first sub heading discusses the challenges with maintain building temperatures for human use and the second sub heading starts to discuss methods to construct building structures that help aid in controlling temperature ranges that are comfortable for people.</li> </ul>
<p>4) Explain how each sequences topic builds on the author’s overall purpose.</p>	<ul style="list-style-type: none"> <li>• Look at all sub headings in the article.</li> <li>• Explain how all sub headings relate or builds on the prior sub heading.</li> <li>• Explain how sub heading/ topic is combined to address the overall central idea.</li> </ul>

### Extension and practice

- Students who need more practice will first in small groups read and discuss each sections of the text and answer guiding questions.
  1. What is the first topic in the article, look under the 1<sup>st</sup> sub-heading temperature control? What is it describing?
  2. What is the second topic in the article? What is it describing?
  3. How are the first and second subheadings related? How do they build on reach other?  
Do this for each subheading in the article fill out responses into you graphic organizer.

With their responses they each student will complete a web graphic organizer that displays how each sub heading and topics relate to one another. A short description will be required to explain student reasoning.
  
- Student who are proficient will complete and ecological foot print survey. They will be able to calculate their consumption of Earth’s resources and compare it to other people in different countries. Students can then examine the survey variables that affect their ecological footprint the most. Example can be water use, forms of waste disposal, form of transportation, etc. In this activity students can identify the relationship between a survived variable and is affect in the increase or decrease on the ecological footprint.

### What next?

For additional practice, with students or for students' independent work, apply this learning objective and set of steps to (name type of text and skill/standard

See more examples of how to teach (name skill and standard)

Objective: Determine the relationship between key terms and principles found throughout the article.

1. Identify the topic describe d by the author under each heading in the article.
2. Explain how each topic heading relates to one another?
3. Provide an example that elaborates on how each topic heading relates to one another.
4. Explain how each sequences topic builds on the author’s overall purpose.

**Question 5**

<b>Question #5</b>	TDQ #5 <i>When bringing all the themes identified under each topic together how does text structure support the authors' purpose?</i>
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<b>Standard(s) covered:</b>	RST. 9.10-5 Analyze the structure of the relationships among concepts in a text, including relationships among key terms. (E.g. force, friction, reaction force, energy).
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<b>Example response that meets standard</b>	<b>Look-for</b>
The author structures the article by first posing the problem of increasing energy efficiency in the United States in the introduction of the article. The next three sections and headings that follow the introduction focus on how Americans can adopt new engineering and architectural designs to promote a decrease in energy used for the heating and cooling of building structures. The article is structured so that each topic builds on the other and addresses the overall theme of increasing energy use. As topics relate to sections prior to the previous topic students are able to deepen their understanding of the resolutions that address the common issue. The author uses this information to persuade the reader to support behaviors that decrease energy consumption.	<ul style="list-style-type: none"> <li>• Statement of the problem or issue as increasing energy consumption.</li> <li>• References each section of the article.</li> <li>• Description how each section of the article is organized to persuade the reader to adopt engineering and architectural design to conserve energy.</li> </ul>

**If students are struggling to answer the text-dependent question, use this follow-up plan for modeling and practice:**

<b>Objective</b>	In this lesson you will analyze text structure by describing the relationship among topic heading that support the author's purpose.
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<b>Prior knowledge to review</b>	<ul style="list-style-type: none"> <li>• RST. 6.8-5 analyzes the structure an author uses to organize a text, including how the major sections contribute to the whole and to an understanding of the topic.</li> </ul>
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<b>Steps to achieve objective</b>	<b>Think aloud for direct instruction</b>
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1) Identify the point the author makes in the introduction of the article.	<ul style="list-style-type: none"> <li>• Read the introduction of the article that is usually found in the first two paragraphs.</li> <li>• What does the author pose as the issue or problem being addressed, this is the main idea. ( increasing energy consumption, environmental impacts, and building energy use)</li> <li>• Are there any other ideas that author uses to specify the main idea with in the introduction of the article?</li> </ul>
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<p>2) Describe how the author structures the article to persuade the reader to support green building</p>	<ul style="list-style-type: none"> <li>• Look at the other section of the article, what does each section of the article discuss.</li> <li>• Which sections are related to green building?</li> <li>• Why do you think the author has written this article?</li> <li>• Is the article written to inform or persuade the reader?</li> <li>• How do you think the author does this?</li> </ul>
<p>3) How does the author structure the text to persuade the reader to support their ideas?</p>	<ul style="list-style-type: none"> <li>• Look at the overall topics of the text. How does the author connect each section of the article in order to build understanding of the topic?</li> <li>• Why do you think the author has written this article?</li> <li>• Is the article written to inform or persuade the reader?</li> <li>• How does the author use the information found each portion of the article to support the author's purpose?</li> </ul>

### Extension and practice

- Students who need more practice identifying details that are relevant to the main idea, start with a class or small group discussion and guide students to identify evidence they think supports the main idea or author's purpose using the sentence stem, "The main idea or authors purpose is to encourage Americans to take action to reduce energy in order to decrease pollution in to the environment and foreign dependency of fossil fuels, the author show this by \_\_\_\_\_(filling in the example from the text)."
- If students are not looking across the text for supporting details, but instead focusing on one section, remind students that the central idea must be the big idea that the author is trying to share for the entire text not just a section, so it's important to look at all of the text to support the central idea. Create a chart with asking, "What does the author show me or tell me here to convey that it is important to reduce energy use in the United States?" Jot down examples for each section, then put them together in a paragraph. Another version of this activity could be to start by dividing the students into groups, each of which are assigned just one section of the text.
- Students who are proficient will add three more rows to the data table at the end of the article and make quantitative predictions about the next thirty years if actions are not taken by Americans to reduce energy use. This will require them to mathematically identify patterns in the data that is already stated for previous year. They will then construct a short paragraph explaining their reasoning and predict the effects of the increase of energy in the United States.

**What next?**

For additional practice, with students or for students' independent work, apply this learning objective and set of steps to (name type of text and skill/standard)

See more examples of how to teach (name skill and standard)

Objective: Analyze the structure of the article and explain it contributes to the author's purpose.

1. What is the point the author makes in the introduction of the article?
2. Describe how the author structures the article to persuade the reader to support green building
3. Explain how the author structures the text to persuade the reader to support their ideas.