



NATIONAL GEOGRAPHIC LEARNING

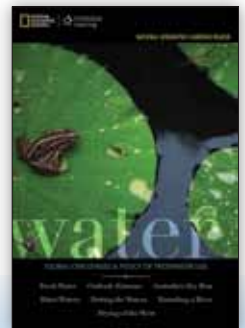
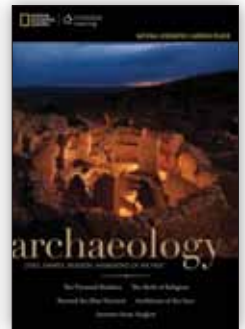
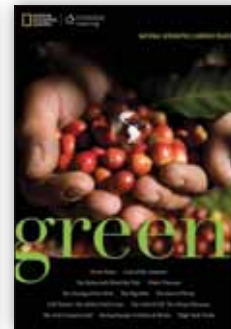
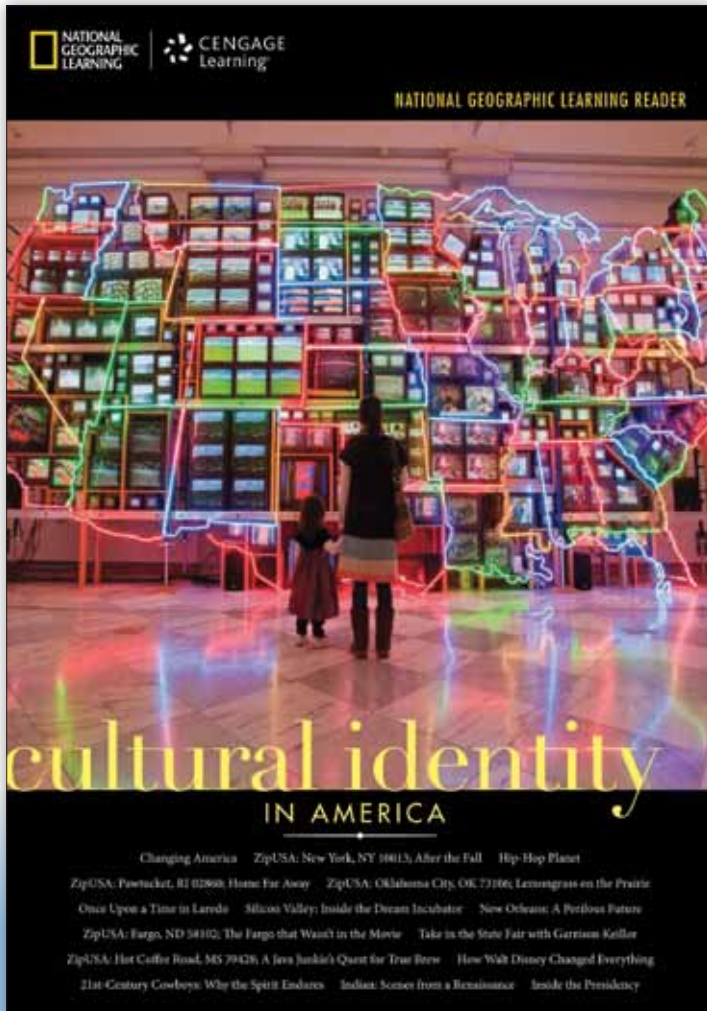
reader series

Stunning Innovative Engaging

A ground-breaking series of themed readers honoring the mission and tradition of the National Geographic Society.

- Each book includes a collection of articles adapted from the **National Geographic magazine** focused on one theme.
- Discussion questions, thematic interpretations and paradigm creations are included.
- Articles present a wide range of global perspectives.
- National Geographic Learning Reader Series take the classroom to the world!

STUDENT BOOKS



eBOOKS



- Each themed book is available as an eBook.
- Students experience images in high definition.
- Embedded media brings print to life.



ONLINE TEACHER'S GUIDES

CLIMATE CHANGE
HUMAN PERSPECTIVES & GLOBAL IMPLICATIONS

About the Series
National Geographic Learning and the National Geographic Society have created a ground-breaking series of high school readers to engage and provoke your students to think critically about issues facing them today. National Geographic Learning Readers bring to life compelling stories, media, photographs, and text from the National Geographic Magazine. Through this engaging content, your high school students will develop a clearer understanding of the world around them. Some content and photographs are mature in nature. You may wish to use discretion when deciding if this content is appropriate for your students.

How the Reader Works
Each article in the Reader focuses on one topic relevant to the discipline, in this case, *Climate Change*. The Reader is divided into articles, just like the National Geographic Magazine. At the beginning of each article students will read an introduction that provides context on the topic of *Climate Change*. A series of focus questions will suggest ideas to students to think about while reading each article, in effect setting

- Meaningful research projects extend learning.
- Articles align to core themes.
- Common Core State Standards for writing for grades 9–12 are emphasized.

WRITING AND RESEARCH PROJECTS

The Common Core State Standards for Writing for Grades 9–10 and 11–12 ask students to:

1. Conduct short sustained research projects to answer a question or solve a problem.
2. Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively.
3. Draw evidence from informational text to support analysis, reflection, and research.

UNDER THE SUN, p. 33
Challengers and Solutions asks students to identify one or more consequences of climate change and how that might influence the student in his or her local environment. Students are asked to propose two to three possible solutions to the problems they cited and create an argument for the best, most realistic and socially acceptable solution.

Using the Common Core standards have students do the following:

1. Conduct a short, sustained research project to identify the consequences of climate change and to propose a solution to these consequences.
2. Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively to bolster their ideas for solutions.

VIKING WEATHER, p. 75
Social Implications asks students to identify the social implications of climate change and how various interest groups might be affected. Students are then asked to choose one of these groups and explore the perspectives of that group. Students

Student Resources

National Geographic Learning Reader Series presents the world, its people, places, and precious resources through compelling National Geographic articles.

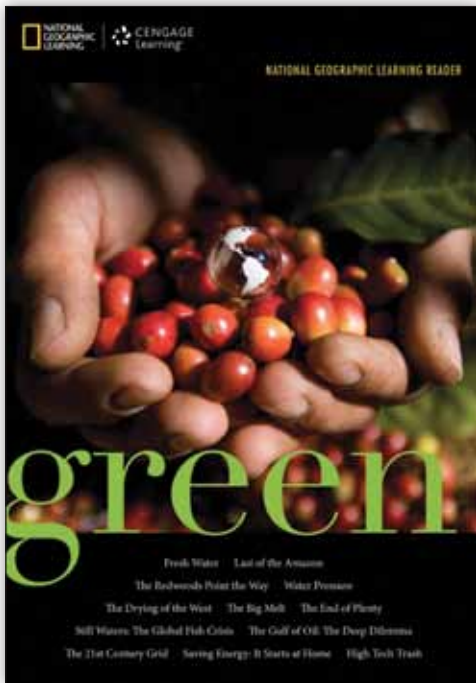


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- Interest for Science, English Language Arts, or Social Studies classrooms
- 5–12 adapted National Geographic articles in each title
- Amazing stories, exceptional research, and rich content

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During a 1972 drought in Bangladesh, a farmer dispensed precious water plant by plant.
© 2010 DICK COFFMAN // National Geographic Image Collection

THE AMOUNT OF MOISTURE ON EARTH HAS NOT CHANGED. THE WATER THE DINOSAURS DRANK MILLIONS OF YEARS AGO IS THE SAME WATER THAT FALLS AS RAIN TODAY. BUT WILL THERE BE ENOUGH FOR A MORE CROWDED WORLD?

The morality of an act is a function of the state of the system at the time it is performed.

We keep an eye out for wonders, my daughter and I, every morning as we walk down our farm lane to meet the school bus. And wherever we find them, they reflect the magic of water: a spider web drooping with dew like a rhinestone necklace. A rain-colored heron rising from the creek bank. One astonishing morning, we had a visitation of frogs. Dozens of them hurtled up from the grass ahead of our feet, launching themselves, white-bellied, in bouncing arcs, as if we'd been caught in a downpour of amphibians. It seemed to mark the dawning of some new aqueous age. On another day we met a snapping turtle in his primordial olive drab armor. Normally this is a pond-locked creature, but some murky ambition had moved him onto our gravel lane, using the rainy week as a passport from our farm to somewhere else.

The little, nameless creek tumbling through our hollow holds us in thrall. Before we came to southern Appalachia, we lived for years in Arizona, where a permanent runoff of that size would merit a nature preserve. In

the Grand Canyon State, every license plate reminded us that water changes the face of the land, splitting open rock desert like a peach, leaving mile-deep gashes of infinite hue. Cities there function like space stations, importing every ounce of fresh water from distant rivers or fossil aquifers. But such is the human inclination to take water as a birthright that public fountains still may bubble in Arizona's town squares and farmers there raise thirsty crops. Retirees from rainier climes irrigate green lawns that impersonate the grasslands they left behind. The truth encroaches on all the fantasies, though, when desert residents wait months between rains, watching cacti tighten their belts and road-runners skirmish over precious beads from a dripping garden faucet. Water is life. It's the briny broth of our origins, the pounding circulatory system of the world, a precarious molecular edge on which we survive. It makes up two-thirds of our bodies, just like the map

Adapted from "Fresh Water" by Barbara Kingsolver: National Geographic Magazine, April 2010.

FRESH WATER 5

- Rich photography
- Pertinent maps and data
- Human interest stories

HIGH-TECH TRASH

Chris Carroll's article sheds light on a problem that is hidden from the average American or European's view, despite its size. Our throwaway culture, combined with the short life-span of our electronic devices and a system that encourages the export of highly toxic e-waste to developing countries, has resulted in a large-scale market in those nations who—legally or illegally—accept and reuse or resell the components of our toxic trash.

As you read "High-Tech Trash," consider the following questions:

- What factors contribute to the market for e-waste in developing countries?
- Why is so little e-waste recycled by the nations of the developed world?
- In what ways have efforts to regulate high-tech trash failed in Europe and the United States?
- What hope do new business models offer for safer alternatives to shipping toxic e-waste overseas, and what steps must be taken in order to create viable alternatives?

HIGH-TECH TRASH

Photographs by Peter Essick

- Questions set a purpose before reading.
- Culminating questions ensure understanding.
- Students develop an appreciation of the world around them.

Interactive Student Resources

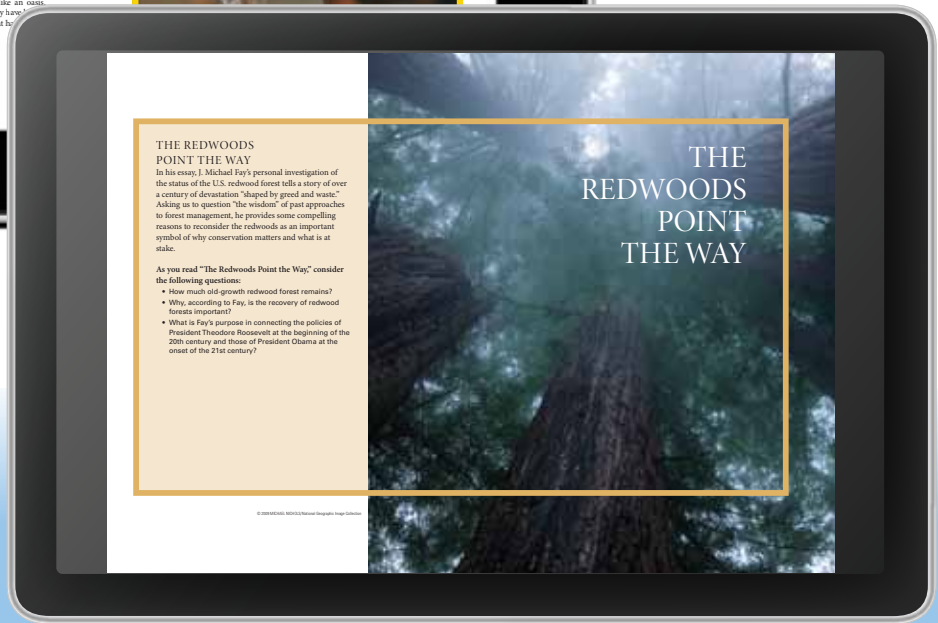
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Online Teacher's Guide is available for each book FREE!

CLIMATE CHANGE

ARTICLE SUMMARIES

Under the Sun (1990) p. 2
Over two decades ago, it was readily acknowledged that Earth's climate was changing and greenhouse gases were influencing the change. National Geographic first covered this story in the 1970's and then again starting in the 1990's. *Under the Sun* offers a comprehensive summary of the state of the science and debate as it was known in the 1990's.

Saving Energy: It Starts At Home (2009) p. 34
How can your students make a difference in the fight against global climate change? Your students can make a difference by working with their families to take control of their energy usage by increasing efficiency and reducing energy consumption. *Saving Energy: It Starts At Home* follows three families that make a pledge to reduce their carbon footprint. It was a challenging enterprise, but these families were successful.

Viking Weather (2010) p. 56
Greenland plays a very key role in the future of global climate change. A huge ice sheet that is rapidly melting covers Greenland. This melting glacier could raise the sea level significantly, flooding coastal communities across the globe. *Viking Weather* gives the unique perspective of the land that the Viking found when they colonized this land mass and how the people of Greenland today look at the positive aspects of global warming for their survival.

The Coming Storm (2011) p. 76
What is a climate refugee? What will the planet do with 250 million of these people? *The Coming Storm* details the challenges facing the people of Bangladesh, who has a growing population and a shrinking land mass because of global climate change.

Can China Go Green? (2011) p. 100
China is the biggest producer of greenhouse gases in the world, yet this nation is also embracing renewable energy. Despite these efforts, pollution is still a major problem facing the Chinese government and its people. *Can China Go Green?* offers students an inside look at how China uses and manages its resources, and why it makes a difference to the rest of the world.

VOCABULARY SUPPORT

Under the Sun
greenhouse effect, carbon dioxide cycle, carbon cycle, ozone, methane, chlorofluorocarbons, solar bombardment

Saving Energy: It Starts At Home
carbon dioxide emissions, BTU, vampire power

Viking Weather
ice sheet, agronomy, fiord, fon

The Coming Storm
climate refugee, mass migration, geopolitical chaos, salinity, coastal aquifers

Can China Go Green?
per capita emissions, national priority, renewable energy technologies

For each article, have students use the word list above as a starting point for vocabulary comprehension. As students read each article, they will find the above words in context. Students should write down their understanding of the word from this context, the page they found the vocabulary word on and the sentence that provides the context.

For each article students should also write down in their student notebooks that they found difficult to understand. Students should attempt to define the word based on the context provided in the article, the page that the word is found on, and the sentence that provided the context definition for the word.

At the end of each article, review the vocabulary along with the Discussion Questions and the other parts of the article review.

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- Article summaries provide the perfect background.
- Vocabulary support ensures comprehension and use of the word in context.
- National Geographic Learning Reader Series is the perfect fit as a supplement to your high school courses and electives.

CLIMATE CHANGE

DIFFERENTIATING INSTRUCTION THROUGH NGL READERS

Above Level Reader Support

Your above level students are fully capable of handling the challenging reading of National Geographic Magazine articles, interpreting the graphics that accompany the articles, and drawing meaningful conclusions about the content of the articles.

Above level students may be assigned all of the "As You Read" questions that begin each article in this reader. These questions set the purpose for reading and get your students thinking critically about the articles in advance. Have students write each question down in a student-generated notebook. As they read each article, students should write down information that addresses the pre-reading question. If you feel that a "Building Background" lesson is in order on the topic, all students at all levels should participate.

Above level students may also be assigned the complete, three-section article review that follows each article in this reader. Students can write down answers to the Discussion Questions for comprehension checks or these can be used as discussion topics for the whole class. Challenges and Solutions and Social Implications provide perfect opportunities to engage students in a significant writing exercise. Each of these end-of-article sections allow students to think critically about the issue the *National Geographic Learning Reader* has raised and to express their own opinion about the issue.

Your expectation for the Above Level student is that all questions and writing assignments are given careful thought, articulated with facts from the article, and writing assignments should include conclusions and student opinions.

On Level Reader Support

Your on level students should be capable of handling most of the challenging reading of National Geographic Magazine articles, interpreting the graphics that accompany the articles, and drawing meaningful conclusions about the content of the articles. You may wish to have your on level students preview each of the articles before reading, write down any questions that they have, and address these questions as a whole class group.

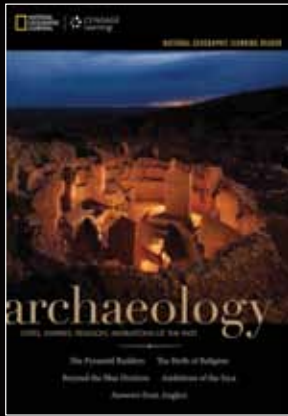
On level students may be assigned all or some of the "As You Read" questions that begin each article in this reader, depending on your level of comfort that these students can successfully master the content presented in each article. These questions set the purpose for reading and get your students thinking critically about the articles in advance. Have students write each question down in a student-generated notebook. As they read each article, students should write down information that addresses the pre-reading question. If you feel that a "Building Background" lesson is in order on the topic, all students at all levels should participate.

On level students may also be assigned the complete, three-section article review that follows each article in this reader. Students can write down answers to the Discussion Questions for comprehension checks and these can be used as discussion topics for the whole class. Challenges and Solutions and Social Implications provide perfect opportunities to engage students in a significant writing exercise. Each of these end-of-article sections allow students to think critically about the issue the *National Geographic Learning Reader* has raised and to express their own opinion about the issue. Before students begin the writing process, review these sections with the class to ensure that all students understand the assignments before beginning.

Your expectation for the On Level student, like that of the Above Level student, is that all questions and writing assignments are given careful thought, articulated with facts from the article, and writing assignments should include conclusions and student opinions.

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- Differentiated instruction is provided for every theme.
- Suggested answers to discussion questions support a lively class discussion.
- Correlations to content standards validate the high quality of each article.



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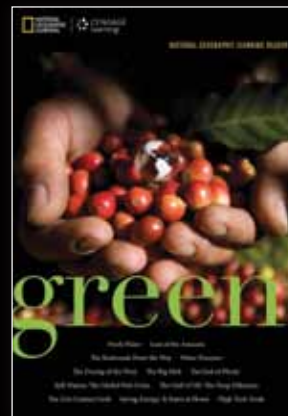
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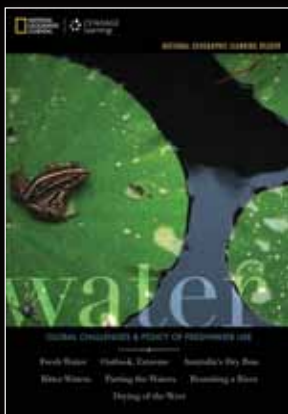
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This series brings learning to life by featuring compelling images, media, and text from National Geographic. Through this engaging content, students develop a clearer understanding of the world around them. Published in a variety of subject areas, the *National Geographic Learning Reader Series* connects key topics in each discipline to authentic examples and can be used in conjunction with most standard texts or online materials available for your content areas.