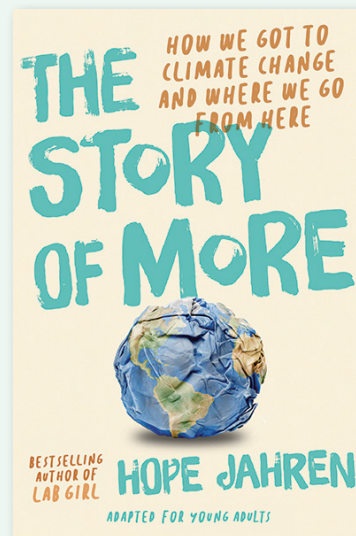
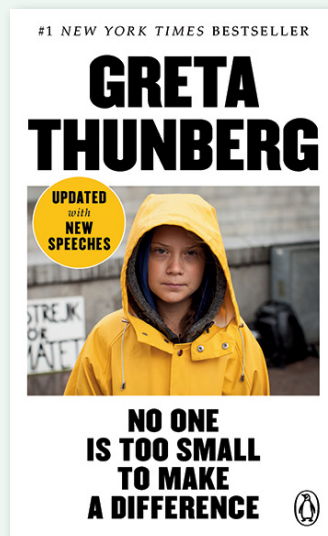


THEMATIC GUIDE

Teaching About Climate Change
MIDDLE SCHOOL



Integrating fiction and nonfiction with climate change themes can help students develop empathy, hope, and optimism. While data and science are essential to the climate change fight, the less tangible themes of empathy, hope, and optimism are vital to making real change. These books serve as a gateway for teachers and students to begin grappling with these ideas.

CONTENTS

INTRODUCTION.	2
HOW TO USE THIS GUIDE.	3
ABOUT THE TITLES IN THIS COLLECTION	3
BUILDING KNOWLEDGE.	6
THEMES	7
WRITING ACTIVITIES.	8
BOOKS & FILMS OF INTEREST.	10
ABOUT THE AUTHOR OF THIS GUIDE.	11

■ INTRODUCTION

According to a 2020 survey of climate change education in each state by the National Center for Science Education and the Texas Freedom Network Education Fund, twenty-three states received a B or lower. Fourteen states received a C+ or lower, with three receiving an F (ncse.ngo/files/MakingTheGrade_Final_10.8.2020.pdf).

The debate over climate change continues to rage in public, but scientists overwhelmingly agree that human-caused climate change is a reality. Teachers have the opportunity to educate students about climate change — and doing so can change the future.

According to a 2020 article in *Proceedings of the National Academy of Sciences*, educating young people about climate change could result in them making choices to decrease greenhouse gases, reduce pollution, and increase Green programs. (pnas.org/content/117/5/2354).

Teachers often avoid talking about climate change for a number of reasons: they don't feel well-versed in the science, they feel it's only appropriate for science class, or they worry about the perceived controversy of discussing climate change. While science class is a natural place to address the realities of climate change, humanities classes provide the opportunity for students to investigate the historical, social, and ethical implications of a world where temperatures and waters are rising.

Integrating fiction and nonfiction with climate change themes can help students develop empathy, hope, and optimism. While data and science are essential to the climate change fight, the less tangible themes of empathy, hope, and optimism are vital to making real change. These books serve as a gateway for teachers and students to begin grappling with these ideas.

■ HOW TO USE THIS GUIDE

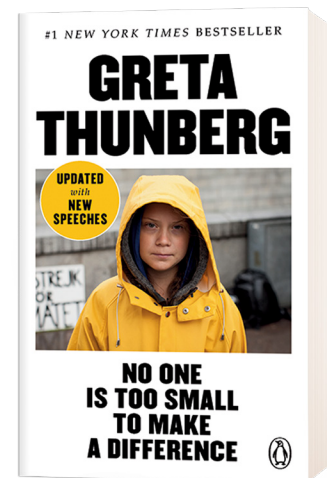
The titles in this collection include fiction and nonfiction texts. The collection's varied genres provide a broad appeal for today's middle school students. The wide variety of texts also allows teachers in many subject areas to integrate whole texts or excerpts into their lesson plans. Climate literacy crosses genres and subject boundaries; both humanities and STEM classes can and should address climate change. The selected texts can be used as whole-class reads, book club choices, and/or independent reading. Teachers can select individual or multiple texts depending on reading level, thematic consideration, and instructional goals. Essential questions are provided to frame the study of these complex texts, and the included questions can serve as conversation starters or writing prompts. The activities outlined apply to all texts and can be adapted to whole class or small group settings such as seminars, literature circles, debates, and class discussions.

■ ABOUT THE TITLES IN THIS COLLECTION

Listed below are brief summaries as well as questions providing purpose, context, and framing while students read.

No One Is Too Small to Make a Difference is a collection of speeches from youth climate activist Greta Thunberg. In August 2018, then-fifteen-year-old Thunberg began her climate protest with a school strike that soon became an international movement called Fridays For Future, (fridaysforfuture.org). Her school strike inspired millions of students to do the same, skipping school to draw attention to the climate crisis.

- Which speech stood out to you as most impactful? Why?
- Which speech surprised you? Why?
- How is this book different from other books about science?
- This collection of speeches is a call to action for adults and young people. Throughout her speeches, Thunberg uses the motif of a burning house. What is her purpose in doing this?



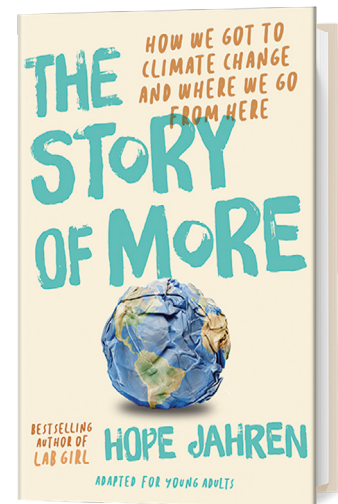
**No One Is Too Small to
Make a Difference**
GRETA THUNBERG

978-0-14-313356-8
Paperback | Penguin Adult
160 pages | \$12.00 | Lexile: 940L

Also available: Audio Download, E-Book

Hope Jahren's *The Story of More: How We Got to Climate Change and Where to Go From Here* (Adapted for Young Adults) highlights the ways that advances in technology have harmed our world while improving our lives. By focusing on changes over her lifetime, Jahren inspires readers to think about individual actions that can make a difference.

- In this book, Jahren focuses on major technological advances of the past fifty years. She set out to figure out how the environment has been altered during her lifetime. Think about your lifetime. How has the environment in your town or city changed (for better or worse)?
- Can you imagine living without electricity? What would your life look like? Describe the changes that would occur.
- A theme throughout Jahren's book is the sheer amount of stuff (food, electricity, land, etc.) Americans use in comparison to other countries. What are some ways our society can "use less and share more"? What are some ways you can use less?
- What can you do to help fight climate change? What can your family do? Your school?
- How does the text illustrate Jahren's definition of responsibility? Do you agree with her view? Explain using examples from your own life, history, current events, or from others you know.



The Story of More

How We Got to Climate Change
and Where to Go From Here
(Adapted for Young Adults)

HOPE JAHREN

978-0-593-38112-0

Hardcover | Random House Children's Books
208 pages | \$16.99 | Lexile: 1240L

Also available: Audio Download, E-Book

In *Strange Birds: A Field Guide to Ruffling Feathers* by Celia C. Pérez, four friends form their own Scout troop to try to stop a local beauty pageant from using its official hat because it is adorned with feathers from endangered birds. The hat has been part of the pageant for one hundred years, but the girls take a stand and demand that their town reflects on its larger meaning.

- What is the Migratory Bird Treaty Act? How does this law connect to the Floras?
- Does the existence of the hat align with the values the Floras promote in their oath? What do you notice?
- Aster's grandpa says, "Being an activist isn't like moving from one job to another or changing shirts. It's something you always are." What does this mean? Is this true in the real world?
- What is civil disobedience? What examples of civil disobedience do you see in the book?



Strange Birds

A Field Guide to Ruffling

CELIA C. PÉREZ

978-0-425-29045-3

Hardcover | Penguin Young Readers
384 pages | \$8.99 | Lexile: 750L

Also available: Audio Download, E-Book

In *Hello from Renn Lake* by Michele Weber Hurwitz, Annalise feels a strong connection to Renn Lake, which sits in the center of the summer rental cabins her family owns. When cyanobacteria begins to take over the lake, Annalise is determined to do something to save it and her parents' business. The lake is one of the many voices that take center stage in this inspiring environmental story.

- What is the impact of the author's choice to use multiple perspectives: Annalise, a young girl; Renn, the lake; and Tru, the river? Consider the impact on the plot, theme, and author's intent. How do these perspectives complement each other?
- What are cyanobacteria? What role do humans play in creating and preventing cyanobacteria blooms?
- Annalise and Zach are passionate about the things they love. They are both willing to fight for what matters to them. What matters to you? What are you willing to fight for?
- Using specific text evidence throughout the novel, trace the symbolism of roots. How does the author use this motif to support a deeper meaning?



Hello from Renn Lake
MICHELE WEBER HURWITZ

978-1-9848-9632-2
Hardcover | Random House Children's Books
256 pages | \$16.99 | Lexile: 540L

Also available: Audio Download, E-Book

The Renegades: Arctic Meltdown by Jeremy Brown and David Selby tells the story of Katelyn, Mo, and Leon, three unsuspecting heroes who take on the climate fight. The group has to tackle multiple environmental issues, from a shady corporation using "Green" labels to make money to a methane monster threatening to burst out of the melting permafrost.

- If the Methanaur escapes the melting Arctic ice, it will release plumes of methane gas into the atmosphere. How will this affect the Earth?
- What is an ecovillage? Why have people been forced to move there? In what ways does the author explore the concept of climate refugees?
- If you could have Katelyn, Leon, or Mo's superpower, which one would you choose? Why?
- The Oracle Specs allow the characters to see the future. At first, they see death and destruction: rising waters, food shortages, and fire tornadoes. But the Specs also show that the future can be changed. Do you think our future is malleable? Can climate change be halted?



The Renegades: Arctic Meltdown
JEREMY BROWN & DAVID SELBY

978-0-7440-2454-8
Paperback | DK
96 pages | \$14.99 | Lexile: HL620L

Also available: E-Book

■ BUILDING KNOWLEDGE

The books in this collection all address the ongoing climate crisis. However, the texts here do not focus solely on the doom and gloom of climate change. Multiple studies have found that hope plays a vital role in encouraging individuals to take action to prevent further damage to the Earth. All of the texts in this collection nurture hope as well as increase understanding about this complicated issue. While some teachers may not feel confident teaching the science of climate change, simply reading and discussing its effects can provide students with the opportunity to form a better understanding of the crisis facing our world.

The books in this collection include scientific references and ideas that some students may be unfamiliar with. To provide an equitable environment where all students have equal access to the reading demands and context of the books, the following activities offer opportunities to build knowledge and capacity around the novels.

WHAT IS CLIMATE CHANGE?

Ask students what they already know or think they know about climate change. Have them record their knowledge on a KWL chart. KWL (an acronym for “What I Know,” “What I Want to Know,” and “What I Learned”) charts can be premade or students can create three appropriately labeled columns on a sheet of paper or Jamboard. Provide students with a few minutes to fill out the first two columns: “What I Know” and “What I Want to Know.”

Next, introduce students to NASA’s Global Climate Change website (climate.nasa.gov). Place students in small groups and provide them with time to investigate the website. After a few minutes, have students navigate to the “Facts” page. Assign each student in the group a topic:

- Global temperature rise
- Warming ocean
- Shrinking ice sheets
- Glacial retreat
- Decreased snow cover
- Sea level rise
- Extreme events
- Ocean acidification

Direct students to research their assigned topic on the page. They should focus on answering the following questions during their research:

- How is the Earth’s climate changing?
- Who does climate change affect?
- What can humanity do to slow down climate change?

After students finish researching, have them meet with their classmates who studied the same topic. Students should compare their ideas and work together to prepare a single document, presentation, or infographic on their topic.

Once finished, have students return to their original group. Each student will take a turn presenting their research to the group. In this way, students learn about a variety of climate-related topics. When all students have presented, have students spend a few minutes reflecting on what they learned. They can now complete the “What I Learned” portion of the KWL chart.

■ THEMES

The following themes appear throughout the titles in this set. Essential questions are designed to be broad so as to capture readers’ attention, invite multiple perspectives, and apply to big ideas across subject areas and units of learning. Conversation starters promote connection and relevance before and after students read.

SOCIAL JUSTICE AND ACTIVISM

Essential Question:

How can ordinary people fight against injustice and advocate for change?

Conversation Starters:

- What role should young people like Greta Thunberg play in the fight against climate change? Should adults, like political leaders, be at the forefront of the fight?
- How can society work together to fight climate change?
- Where do you see injustice in your community? School? State? How can you speak up to put a stop to injustices?

HUMANS VS. NATURE

Essential Question:

How are we transformed or shaped by our relationships with nature?

Conversation Starters:

- How does where we live influence who we are?
- What does nature teach us about diversity?
- It is often difficult for humans to grasp events that seem outside the bounds of our own lives. How does this influence humanity’s relationship with the environment?

VALUES AND BELIEFS

Essential Question:

How do society's values and beliefs change over time? How do individual's values and beliefs change over time?

Conversation Starters:

- How can an individual's decisions change their life? The world?
- How does conflict lead to change?
- How does perspective shape or alter what we believe?

THE POWER OF STORY

Essential Question:

Why are stories important to our society?

Conversation Starters:

- How can writing the story of climate change (in fiction or nonfiction) shape the present and the future?
- Who bears the burden of climate change?
- How can stories serve as a vehicle for social change?

■ WRITING ACTIVITIES

CULMINATING WRITING ASSESSMENT

A writing assessment can provide students with a map for reading and analyzing texts. If introduced at the beginning of the unit, students can use their notes and annotations to help them respond to the prompt. Writing prompts should encourage students to think critically and expand on relationships between texts. For example, students might respond to one of the following prompts:

- (Older/advanced writers): Many of the people and characters in this unit take a stand against climate change. In a well-developed essay, list and explain some of the measures that can be used to halt climate change. Cite evidence from at least three texts to support your argument.
- (Younger/progressing writers): The effects of climate change can already be seen in our world. Fortunately, small changes can make a big difference. Draft a letter to a local elected official to address a climate-related issue of your choice. Include evidence from at least one text to support your argument.

QUICK WRITES

Quick writes provide the opportunity for students to write quickly without worrying about being “right” and allow students to respond to texts before sharing their thoughts with a larger group. While reading the texts (or excerpts) listed here, ask students to respond with quick writes. These informal writing opportunities provide a way to generate and hold thinking about authors’ complex themes, as well as a chance for students to make connections to prior knowledge, their own experience, or the world around them. Quick writes can come directly from the conversation starters included in this guide, or they might be more creative or personal, like those below.

- Describe an important outdoor place in your life.
- How can halting climate change improve peoples’ lives?
- How can technology help the environment?
- Why is it important to preserve nature?
- What are some ways you and your family could use less energy?
- How should the government address climate change?

MULTIGENRE NATURE ANTHOLOGY

The books in this collection present climate change and the fight for climate justice in a variety of ways and through different genres. After reading a selection of texts in this collection, students can reflect on their relationship with nature.

Challenge students to create a multigenre anthology: a collection of work that reflects their relationship with nature. Their anthology should contain writing pieces that show the role that nature plays in their life. A multigenre anthology consists of several different genres; these separate entries will all be tied together by the common thread that is the student’s connection with nature. Some of the pieces will be originals that students create, and others will be items written by other authors that are meaningful to them.

Although each student’s anthology will be unique, they should all contain the same elements. Some possible elements include:

- A cover/title page
- Table of contents
- 2-3 original texts (written by the student)
- Possible genres include but are not limited to: obituaries, podcasts, essays, imagined journal entries, short stories, speeches, narrative scenes, newspaper articles, classified ads, reviews, encyclopedia entries, recipes, manifestos, prayers, maps, timelines, newscast dialogues, résumé/job applications
- One nonprint nature sketch/artwork (created by the student). This should be a “picture” by the student. It can be a painting, sketch, photograph, drawing, or any other medium that can be placed in the book.

- 2-3 “choice” texts (excerpts) written by others but are meaningful to the student. Examples include: poems, quotes, song lyrics, excerpts from fiction/nonfiction books, comics, song lyrics
- Each piece in the anthology should include a short (100-word) reflection. This reflection will explain why the student chose to include the piece in their anthology and how it highlights their relationship with nature.

#FRIDAYSFORFUTURE

#FridaysforFuture began in August 2018 when then-fifteen-year-old Greta Thunberg began a school strike for climate. A month later, Greta and other young people decided to continue their strike until the Swedish government approved policies in line with the Paris Climate Accords. They created the hashtag #FridaysforFuture and encouraged other young people to get involved. The campaign’s website (fridaysforfuture.org) features instructions for young people to take action. Challenge students to write a proposal for a school strike in a character’s voice from one of the texts. Alternatively, ask them to create a poster campaign encouraging their peers to participate in some of the suggested activities.

■ BOOKS & FILMS OF INTEREST

FURTHER READING

Visit our website, prhsecondaryeducation.com, to browse additional fiction and nonfiction titles about climate change.

FILMS & DOCUMENTARIES

I Am Greta (Hulu)

The Condor & The Eagle (filmsforaction.org)

Intelligent Trees (Amazon Prime)

Last Call for the Bayou (Amazon Prime)

David Attenborough: A Life On Our Planet (Netflix)

Lowland Kids (Vimeo)

Princess Mononoke (HBO Max)

Our Planet (Netflix)

24 Hours of Reality: “Earthrise” by Amanda Gorman (YouTube)

Tomorrow (iTunes, Google Play)

Whale Rider (Amazon Prime)

PODCASTS:

“Capacity for Wonder and Sunsets” (*The Anthropocene Reviewed*)

“From Tree to Shining Tree” (*RadioLab*)

“Ginkgo Stink” (*Outside/In*)

“How Do We Know That Birds Are in Trouble?” (*Bring Birds Back*)

“Kids Save the World” (*The Children’s Hour*)

“A Long-shot Bid to Save the Monarch Butterfly” (*Outside*)

“What to Do When Climate Change Feels Unstoppable: Clover Hogan” (*TED Talks Daily*)

■ ABOUT THE AUTHOR OF THIS GUIDE

Sarah Mulhern Gross is a high school English teacher and National Board Certified Teacher in Lincroft, New Jersey. She has a MAT degree in teaching biology from Project Dragonfly and Miami University. She is a contributor to *The New York Times* Learning Network and her writing has appeared in *Scientific American*, ASCD, the *New Jersey English Journal*, and *The Washington Post*’s Answer Sheet. Sarah has presented for NCTE, NJCTE, NJCEL, NJEA, *The New York Times* Learning Network, Fordham University’s Summer Literacy Institute, the Center for Teaching Excellence, and the New Jersey Science Teachers Association. She is the cofounder of #nerdcampNJ, NJCTE past vice president, and past faculty board member for curiousSCIENCEwriters, which provides a platform for publishing student science writing.

