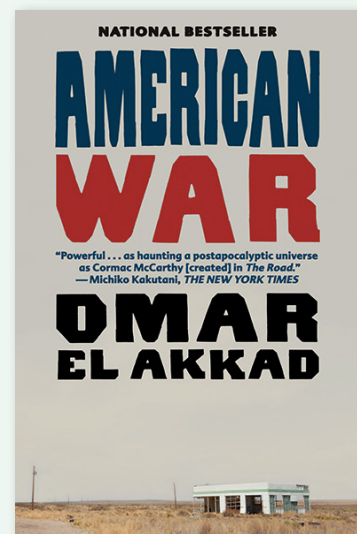
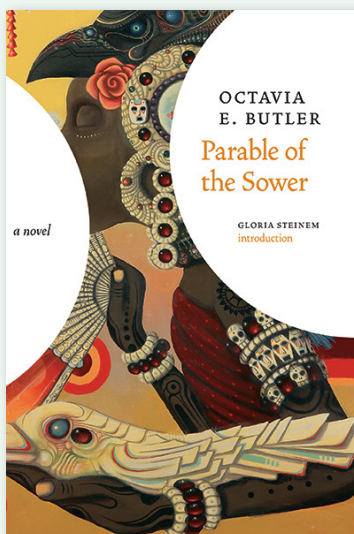
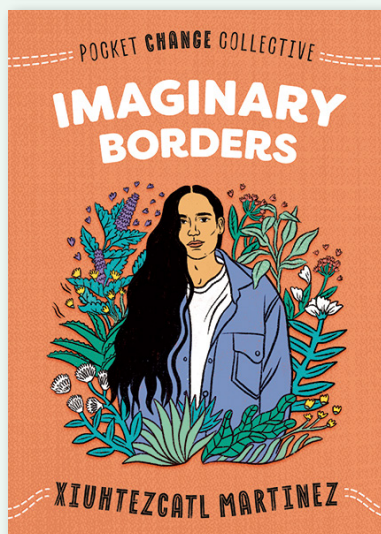
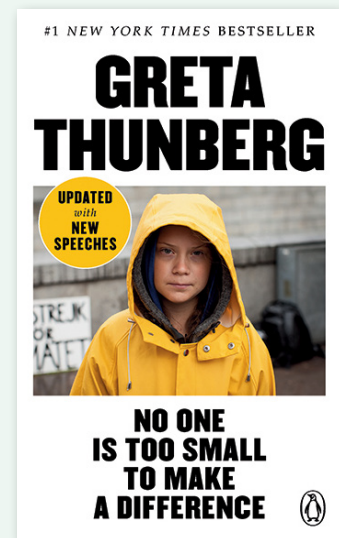
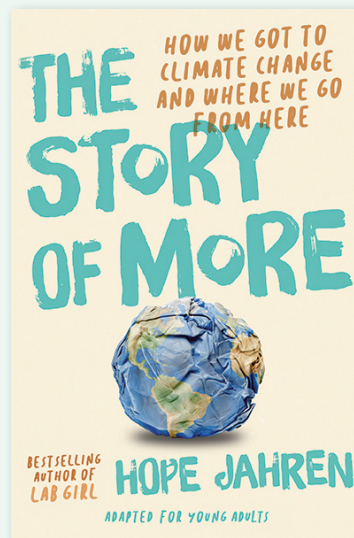
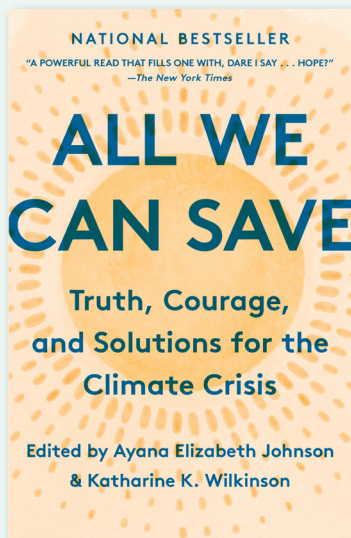


THEMATIC GUIDE

Teaching About Climate Change
HIGH 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.

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■ INTRODUCTION

According to a recent poll from NPR, at least 36 states mention the “reality of human-caused climate change” in their state standards for education. However, a 2019 NPR/Ipsos poll found that only 42 percent of teachers address climate change in their lessons. By ignoring climate change in school, adults are telling students that the issue isn’t important. At the same time, young activists like Greta Thunberg, Xiye Bastida, Xiuhtezcatl Martinez, Leah Namugerwa, and many others are mobilizing their peers to demand greater action on climate change.

Educating our students about climate change can literally 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 controversy of acknowledging climate change. While science class is a natural place to address the realities of climate change, social science and literature 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, poetry, 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, these less tangible themes are vital to making real change. The titles in this collection serve as a gateway for teachers and students to begin grappling with these ideas.

■ HOW TO USE THIS GUIDE

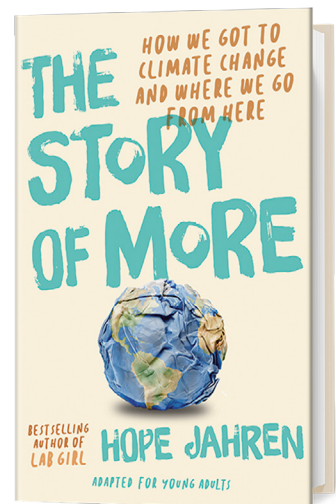
The titles in this collection include fiction and nonfiction texts. The collection's varied genres provide a broad appeal for today's high school students while allowing teachers in many subject areas to integrate whole texts or excerpts into their lesson plans. Climate literacy crosses genres and subject 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.

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 the individual actions that can make a difference.

- In the introduction to the book, Jahren says “that hidden inside humanity’s capacity to make a problem is the capacity to solve it.” What does she mean by this?
- In this book, Jahren focuses on major technological advances of the past fifty years and their effects on the environment. Think about your lifetime. How has the environment in your town or city changed (for better or worse)?
- A theme throughout Jahren’s book is the sheer amount of everything (food, electricity, land, etc.) Americans use in comparison to other countries. What are some ways our society can “use less and share more”?
- In the final section of the book, Jahren challenges her readers to think about their responsibilities. She says the first step is to decide which issues are most important to you. She asks, “Which ones resonate with your daily life, your greatest fears, your highest aspirations?” How would you answer these questions?



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

Adult Edition

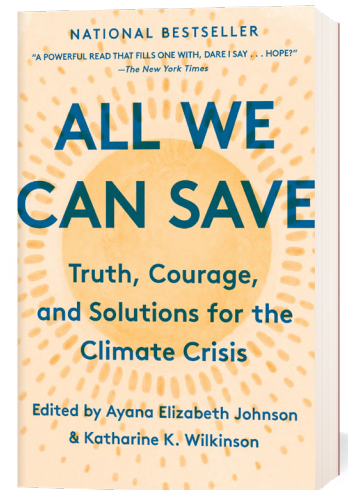
978-0-525-56338-9

Paperback | Vintage
224 pages | \$16.00 | Lexile: 1270L

Also available: Audio Download, E-Book

Edited by marine biologist Dr. Ayana Elizabeth Johnson and teacher and author Dr. Katharine K. Wilkinson, *All We Can Save: Truth, Courage, and Solutions for the Climate Crisis* is a collection of essays, memoirs, stories, and poems by 60 women at the forefront of the fight against climate change that inspires readers to reflect and take action.

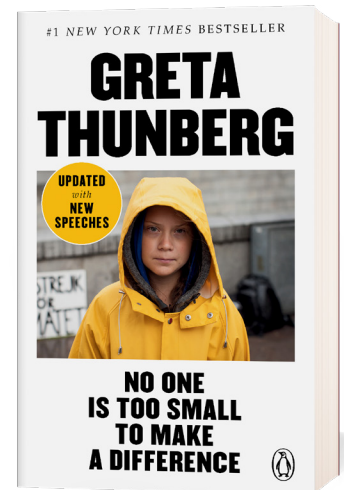
- The book is divided into eight sections: Root, Advocate, Reframe, Reshape, Persist, Feel, Nourish, and Rise. What is the significance of dividing the text into these thematic sections?
- The book's subtitle is *Truth, Courage, and Solutions for the Climate Crisis*. Many experts feel that hope is an important part of the climate fight, but it is not included in the subtitle. Why do you think that is? What role do you think the feeling of hope plays in how individuals deal with climate change?
- The essays in the book cover every angle of the climate crisis: Xiye Bastida's "Calling In" is a call to action; Janine Benyus's "Reciprocity" addresses our interconnected ecosystems; Favianna Rodriguez's "Harnessing Cultural Power" argues that art and culture can inspire real change; Alexandria Villaseñor's "A Letter to Adults" calls on adults to stand beside young people in the climate fight. If you had to select one of these essays to share with your friends and family, which would you pick and why?
- Climate change is often discussed in terms of science, but the authors in this collection argue that we must listen to many voices to address this multifaceted issue. Do you agree that the arts, culture, and spirituality must also be included when designing climate change solutions? Why or why not?
- At the end of the book, Dr. Johnson and Dr. Wilkinson say that the collection's theme is "ferocious love—for one another, for Earth, for all beings, for justice, for a life-giving future." What examples of this do you see in the anthology? Which pieces exemplify this "ferocious" love?



All We Can Save
 Truth, Courage, and Solutions
 for the Climate Crisis
 Edited by:
 AYANA ELIZABETH JOHNSON,
 KATHARINE K. WILKINSON
 978-0-593-23708-3
 Paperback | One World
 448 pages | \$18.00 | Lexile: 1190L
 Also available: Audio Download, E-Book

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 (<https://fridaysforfuture.org/>). Her school strike inspired millions of students to do the same, skipping school to draw attention to the climate crisis.

- One of the struggles of the climate change movement is simplifying complex scientific concepts so that people can understand them. After reading this collection of speeches, do you feel that Thunberg succeeds in doing this? Why or why not?
- 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?
- Which speech is the most powerful in your opinion? Why?
- Thunberg's speeches include both scientific data and passionate calls to action. She utilizes logos (data), pathos (emotions), and ethos (credibility) throughout them. Which rhetorical appeal is the most convincing in the climate fight? Cite an example from one of Thunberg's speeches to back up your assertion.



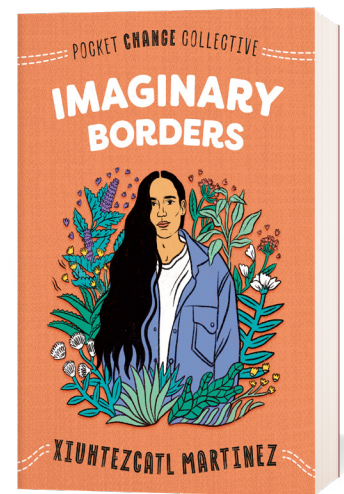
No One Is Too Small to Make a Difference
GRETA THUNBERG

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

Also available: Audio Download, E-Book

Xiuhtezcatl Martinez – Indigenous activist, Earth Guardians youth director, and hip-hop artist – is the author of *Imaginary Borders* (part of Pocket Change Collective). In this slim volume, Martinez argues that climate change is an urgent issue that disproportionately impacts communities of color.

- What is the significance of the title *Imaginary Borders*? How does Martinez draw connections between the climate crisis and immigration?
- Martinez says that the climate crisis is more than an environmental problem: it's a social justice issue. How does he back up this assertion? Do you agree?
- Martinez argues that “one of the most damaging colonial legacies from a climate perspective is the illusion that we are separate from our environment.” How does this play out where you live? Where do you see this play out in national issues?
- Discuss the relationship between Martinez's music and his identity, both past and present. Then, discuss key instances where his art influences his participation in the fight for climate justice.



Imaginary Borders
XIUHTEZCATL MARTINEZ

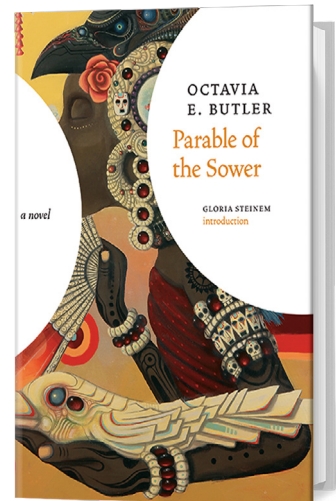
Illustrated by: ASHLEY LUKASHEVSKY

978-0-593-09413-6
Paperback | Penguin Young Readers
64 pages | \$8.99 | Lexile: 1210L

Also available: Audio Download, E-Book

Parable of the Sower by Octavia E. Butler was originally published in 1993 and is set in 2024. The story follows teenaged heroine Lauren Oya Olamina who lives with her father, stepmother, and brothers in a gated community in Los Angeles. Outside the gates of their neighborhood, society has collapsed due to global warming and governmental failures. Water shortages, epidemics, natural disasters, and more continue to pummel society.

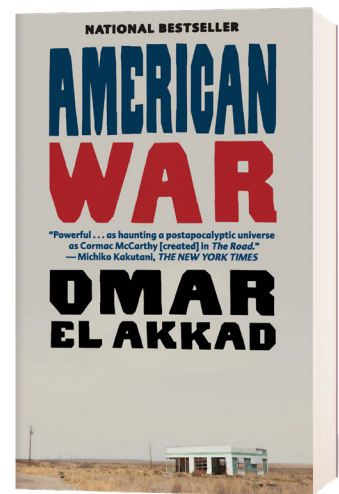
- What is the relationship between people and the environment at the beginning of the book? What is the relationship between people and the environment in Earthseed, the new religion Lauren designs?
- What does Los Angeles (or California as a whole) look like in the novel? Does it resemble Los Angeles today? What is similar? What is different?
- What role does race play in the environmental crises highlighted in Butler's story? What role does race play in our current environmental crisis? Are there similarities between what you see in today's world and what Butler created in her imagined world?
- In the book, Lauren is characterized as a "hyperempath." What is the significance of this trait? How does it affect Lauren?
- In what ways is life in this novel surprisingly like life today?
- What is a parable? Is the book a parable? If so, what should we learn from it?



Parable of the Sower
OCTAVIA E. BUTLER
Introduction by: GLORIA STEINEM
978-1-60980-719-1
Hardcover | Seven Stories Press
336 pages | \$24.00 | Lexile: 710L

American War by Omar El Akkad is a dystopian tale set in a near-future America that has been ravaged by climate change. Rising waters have flooded many coastal states, including Florida and Louisiana, creating climate refugees. The federal government has banned the use of fossil fuels, but many southern states refuse to follow the law and instead attempt to secede. This leads to a violent Second Civil War.

- Review the map at the beginning of the book. What do you notice? What do you wonder? What surprises you?
- Primary sources – government reports, letters, excerpts from personal documents – are interspersed throughout the story. What effect do these have on the reader?
- What role does climate change play in the novel? How do these characterizations of climate change align with what scientists warn about today?
- Water plays both a material and symbolic role in the story. Trace the symbolism of water in the text. How does it influence the events of the book? How does it change or alter characters?
- In what ways is life in this novel surprisingly like life today?
- Climate fiction, or cli-fi, is defined as a genre of fiction that deals with the impacts of climate change. Science fiction is a genre that deals with futuristic concepts. How would you classify *American War*? Is it climate fiction or science fiction?



American War
OMAR EL AKKAD
978-1-101-97313-4
Paperback | Vintage
432 pages | \$16.95 | Lexile: 890L
Also available: Audio Download, E-Book

■ BUILDING KNOWLEDGE

From fiction to nonfiction, the books in this collection dive into climate change in both our world and imagined worlds. While some teachers may not feel confident teaching the science of climate change, simply reading and discussing the effects of climate change can provide students with the opportunity to form a better understanding of the crisis facing our world. Students may be familiar with some aspects of climate change, but a recent Kaiser Family Foundation/*Washington Post* Climate Change Survey shows that many teens have misconceptions about the causes and effects of climate change (kff.org/report-section/the-kaiser-family-foundation-washington-post-climate-change-survey-main-findings). The books in this collection create an opportunity for students to think about the small- and large-scale effects of climate change and global warming.

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

WHERE ARE YOU FROM?

In *The Story of More*, Hope Jahren asks in Chapter 4, “Where are you from? I’m not asking where you were born, but rather, where you made your first memories. What was the first landscape you remember seeing out the car window? Desert? Ocean? Plains? Mountains? Trees? Buildings?”

Have students write about the place(s) they are from. What environment(s) have been significant to their development as a person? They may decide to write about the place they were raised in, or choose some other environment that has impacted them. They can respond in prose or poetry, but they should dig in and think about the place(s) they are from. You may want to have them focus their writing on a particular event in order to frame their discussion.

JIGSAW ACTIVITY: YOUTH CLIMATE ACTIVISTS

Divide students into small groups of 4–6. Assign each student in the group a youth climate activist to research:

- Mitzi Jonelle Tan
- Xiye Bastida
- Isra Hirsi
- Xiuhtezcatl Martinez
- Leah Namugerwa
- Jerome Foster II
- Alexandria Villaseñor
- Greta Thunberg
- Autumn Peltier

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

- Where was this person born and/or raised?
- How old are they?
- How did they get involved in climate activism?
- What are their major achievements thus far in climate activism?

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

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 youth climate activists. When all students have presented, have students spend a few minutes reflecting on what they learned. What are young people able to accomplish? What challenges do young people face when fighting climate change? What challenges do they have to overcome? What surprised you? This writing can serve as an exit ticket or journal entry.

CAMPAIGN PROJECT

Campaigns (real or fictional) are a great way to get students to think critically about problems and help them develop a call to action. Using any of the books in this guide, encourage students to create a campaign to persuade a group (real or fictional) to fight climate change. For example, students might write a letter to a congressional representative, create a public service announcement for the school announcements, or write a letter to a local or school newspaper editor.

Begin by having students brainstorm a list of possible campaign topics. Examples could include:

- Elevating and empowering diverse voices that are engaged in the fight against climate change (*All We Can Save*)
- Doing more with less: using less electricity, eating less meat, reducing pollution, relying on public transportation (*The Story of More*)
- The role of youth in the climate fight (*No One Is Too Small to Make a Difference*)
- Environmental justice (*Imaginary Borders*)
- Water shortages (*Parable of the Sower*)
- Rising sea levels (*American War*)

Once students choose a topic, work with them to brainstorm a list of writing genres they can choose from. Ideas might include speeches, poems, songs, letters to the editor/editorials, comics, posters, pamphlets, and videos. Provide time for students to research and create their projects.

Students can work individually or in small groups to create their campaigns. Encourage students to share their final project with an authentic audience, if possible. Too often, we ask students to create projects that never go beyond the walls of our classrooms. Instead, challenge students to find a real audience, beyond the teacher and their classmates, for this project. For example, students could hang posters around the school, submit letters to the local newspaper, and/or post hashtag campaigns online.

■ 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.

NATURE AND THE ENVIRONMENT

Essential Question:

What are the responsibilities of the individual and society when it comes to the environment?

Conversation Starters:

- Are you concerned about climate change?
- Have you made any changes to your lifestyle because of climate change?
Has climate change affected you or your family?
- Can individuals stop the problem of climate change? Or is it something only governments and corporations can solve?
- At one time, humanity adapted itself to the environment: they hunted and gathered for what they needed. But humanity soon learned to adapt the environment to fit their needs. What are some ways humans have done this? What are the implications for the environment?

RACE AND ENVIRONMENTAL RACISM

Essential Question:

What is environmental justice?

Conversation Starters:

- How do environmental issues, including climate change, disproportionately affect BIPOC communities?
- Should environmental justice be centered in the climate change movement? Should environmental justice be centered in the social justice movement? Why or why not?
- Economic success and environmental goals are often in conflict with one another in the modern world. How can we ensure that people have access to ways to succeed while also protecting the planet?

SOCIAL CHANGE AND ACTIVISM

Essential Question:

Can literature and nonfiction serve as an impetus for social change?

Conversation Starters:

- How important is taking action against climate change?
- Can books persuade us to make lifestyle changes? What changes could you make to protect the planet?
- How have young people like Greta Thunberg, Xiuhtezcatl Martinez, and Alexandria Villaseñor inspired people to speak up about climate change?
- What role should young people play in the fight against climate change? Should adults, like political leaders, be at the forefront of the fight?

COMMUNITY

Essential Question:

What responsibility does an individual have to the community and what responsibility does the community have to individuals?

Conversation Starters:

- What communities are you a part of? What role do nature and the environment play in those communities?
- Climate change often leads to displacement. Where can we see displacement in contemporary times?
- Who bears the burden of climate change?
- What power do we have over the future of our planet?

HOPE

Essential Question:

Where can we find hope?

Conversation Starters:

- Do you feel optimistic or pessimistic about climate change?
- What is the role of hope in the fight against climate change?
- Texts that focus on the environment often take on a pessimistic and doom-laden tone. Do you think this tone is counterproductive? Does it discourage or encourage readers to take action?

■ 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): In 2003, author William Gibson wrote, “The future is already here – it’s just not evenly distributed.” Society often views climate change as a problem of the future, but many of the texts in this unit address the effects of climate change today. Consider one or more of the books we read in this unit. In a well-developed essay, analyze how authors and activists hold society responsible for its inaction on climate change. Cite textual details to support your thesis.
- (Younger/progressing writers): The effects of climate change can already be seen in our world. How should we balance individual and collective responsibility for climate change? Choose a work from our unit where a character or author makes a difference in the fight against climate change. In a well-written essay, analyze how they balance individual and collective responsibility. Be sure to use specific text examples to support your argument.

ONE-PAGERS

A one-pager is an exercise or assignment in which students share the most important takeaways from reading (or other media) on a single sheet of paper (or digital slide/Jamboard). These can be created individually or in small groups. They can help students summarize texts, synthesize what they’ve read, and draw connections between ideas. One-pagers can be a great way to assess literature circle or book club choices, and displaying them can create a gallery wall for other students who may be inspired to pick up the same books.

You may give students free rein on the design or create a list of requirements. Teachers commonly require students to include key quotes, images, and themes. If you’d like to provide a template for students, guidance can be found on the *Cult of Pedagogy* blog, cultofpedagogy.com/one-pagers.

After students finish reading an excerpt or full text, assign the one-pager. Provide students with class time to work on the one-pagers and remind them that their art is not being graded. Focus on the synthesis and evaluation students are doing while creating their one-pager.

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. 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.

- What do you feel your responsibilities are regarding climate change?
- Are you an environmentalist? Why or why not? What does it mean to be an environmentalist?
- Why do you think people deny climate change?
- What is the role of hope in the fight against climate change?
- How do some people connect their identity with the climate justice fight?
- How does our economic system incentivize climate change?
- Where do you see environmental injustice in your community? Would you fight for environmental equity?
- What solution could your school implement?
- What is the value of a place? How do we determine its value? A place could be as personal as your schoolyard, the empty lot in your neighborhood, or your favorite beach. Alternately, you might consider the value of places like forests, farmlands, and mountains. Choose a place that matters to you.

SCIENTIFIC LITERACY: TRACKING ISSUES

Climate change is an issue that affects us all. Some of the controversy surrounding climate change stems from society’s failure to understand the science of climate change and global warming. Students can investigate this issue by researching the same scientific issue in three different forms of media: a peer-reviewed publication, a novel or nonfiction book, and the media.

As students read one or more of the texts, have them choose a climate issue to focus on. Examples can include:

- Fossil fuels
- Extreme weather
- Sea level rise
- Renewable energy
- Agriculture/food
- Water scarcity/drought
- Wildfires
- Rising temperatures

Once students choose a topic, they should track that topic in their book. How is it presented? Who is affected? What solutions are shared?

Next, students should find a peer-reviewed article about their topic. Using the same questions, students should take notes on how the issue is presented, who is affected, and any solutions offered.

Finally, students should use the internet to find a newspaper or magazine article about the topic. How is the topic presented in the media?

After reading all three texts, students should analyze the treatment of the issue in each medium, highlighting both recurring themes and notable differences. This could be done in an essay, slideshow, Jamboard, or jigsaw format. Students can work individually or in small groups.

■ 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)

Racing Extinction (Netflix)

This Changes Everything (Netflix)

Tomorrow (iTunes, Google Play)

■ 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 co-founder of #nerdcampNJ, NJCTE past Vice-President, and past faculty board member for curiousSCIENCEwriters, which provides a platform for publishing student science writing.

