A Curriculum Guide to

How to Change Everything: The Young Human's Guide to Protecting the Planet and Each Other

By Naomi Klein with Rebecca Stefoff

A note from the curriculum guide writers

Welcome to *How to Change Everything*! This book is an amazing resource; we think you're going to like it and use it in ways that serve your and your students' needs.

We want you to feel confident that your students can use this wonderful book to learn about climate change accurately, meaningfully, and flexibly. That's why a goal of this guide is to amplify Klein's exploration of the tension between important individual acts and the need for collective action, as well as the complexity of climate change's social and political causes and effects. In addition, we know, in the words of Klein's short film *A Message from the Future* (described in chapter nine), that "you can't be it if you can't see it." For that reason, we've included connections to several different standards frameworks—including those from Common Core, NGSS, and Learning for Justice—plus stances and strategies that have worked for us and the teachers we mentor. We hope you'll find ways to use *How to Change Everything*, whether the entire book or selected chapters, as a tool for building critical thinking, vigorous discussion, and fundamental understandings.

It's vital that young people learn about climate change, and there is no better time to do so than in the middle-grade years, when young people begin not only to develop abstract reasoning and to think realistically about the larger world and their place in it, but to develop their sense of social justice as well. Students in the middle grades are eager for authentic opportunities to turn their heads and hearts toward adulthood and its promises of connection and purpose. *How to Change Everything* can support that transition with valuable tools and legitimate opportunities for personal, intellectual, and social growth.

We're excited to help you use *How to Change Everything* with your students!

Deirdre and Kirstin

About the Book

Adapted from Naomi Klein's two decades of climate writing, including *This Changes Everything*, the book *How to Change Everything* is both a guide and a toolkit for young readers to understand and combat climate change and actually change the world. Written on a foundation of science interwoven with current and historical events and focused on youth action, this book provides a clear and coherent presentation of the interconnected environmental and social crises that our young generation faces. It is simultaneously realistic about complex and serious climate issues and hopeful about young people's ability to problem-solve the climate crises. *How to Change Everything* is divided into three sections. "Part I: Where We Are**"** introduces readers to kids like themselves fighting against climate change and for social justice. "Part II: How We Got Here" examines what we have learned about our climate and traces human actions leading up to the present. "Part III: What Happens Next**"** is an invitation to young people, offering them opportunities to understand the environmental effects of climate change while empowering them to take action to temper those effects by fighting with purpose and hope for climate justice for all people.

Discussion Questions

The following discussion questions may be used for individual writing prompts or to guide robust classroom discussion, and are broken down into sections following the book's structure.

- In order to deepen understanding and facilitate critical thinking, questions are balanced among four types: **convergent** (or closed), **divergent** (or open), **evaluative** (or application/synthesis), and **rhetorical**. These common question types are long established as effective in classroom learning, and balancing among them offers varied entry points for students so as to welcome everyone into the conversation.
- Questions are also formulated to address Common Core English Language Arts - Science & Technical Subjects standards, Common Core English Language Arts Writing standards as well as Learning for Justice standards. These alignments can be found at the end of this section.

Introduction

1. *How To Change Everything* begins underwater, which is meaningful metaphorically as well as with regard to climate change and rising sea levels. What metaphor or

metaphors best capture the climate you live in and your experiences of climate change or climate injustice?

Part I: Where We Are

"You'll see some of the steps that kids like you are taking against climate change and for social justice, including racial, gender, and economic justice"—Klein, introduction to *How to Change Everything*

2. During the first global School Strike for Climate, more than a million and a half students walked out of school, some with permission and some without. Do you think protests and actions for climate justice complement formal learning, or are they a disruption?

3. Just as you have a point when you are leaning over at which you can no longer stay in an upright position and you "tip" over, so do systems have tipping points. Once a tipping point is reached, change can be swift and recovery impossible. With regard to our climate, however, we have the power to slow the course of extreme events. Consider the West Antarctic Ice Sheet, which is melting and will raise sea levels. We probably cannot stop the melting, as we are past the tipping point. We can, however, slow it by cutting greenhouse gas emissions that are contributing to global warming. What is the advantage to slowing the melting?

4. In 2013, fifteen million Americans lived within one mile of a fracking well. This puts places such as residences and schools close to the potential source of an oil leak or gas fire. Do you think oil extraction by this method is worth the risk to this many Americans? Do you think this puts only some at risk, or are we all at risk? Explain your answers.

5. Henry Red Cloud of the Lakota people brought solar heaters to the Northern Cheyenne Indian Reservation in southeastern Montana. Red Cloud discovered that he could build interest in solar power by showing people what they *can* do rather than telling them what they *should* do. What prompts you to take action? Do you want to be inspired, instructed, or both?

6. Sacrifice zones are enlarging, meaning a greater number of people are being forced, not asked, to make sacrifices based on climate. According to Klein, "We are all in the sacrifice zone now, unless we join together and raise our voices in opposition." Should you wait until you are personally affected by a sacrifice zone to take action? Can we predict whether or not we will ever be included in a zone? Do you think the entire Earth can be considered one zone?

7. Compare locations of sacrifice zones with areas of highest resource consumption. Reflecting on what you read, do you think a climate change movement can be separated from an economic and social justice movement? What is the reasoning for your answer?

Part II: How We Got Here

"You'll dive into what we have learned about the state of the climate now, and how we got here"—Klein, introduction to *How to Change Everything*

8. The invention of the steam engine in the late 1700s accelerated and contributed to the rapid growth of industry and the use of, and eventual reliance on, fossil fuels. This progression has directly contributed to our climate crisis. Could James Watt have considered the long-term implications of his work, or is it reasonable that he focused only on ingenuity and advancement? Since scientific advancement can lead to problems as well as progress, should ethics be considered during invention, during application, or both? Explain your answers.

9. According to the book, "We all live inside the story written by coal, oil, and extractivism." What is the future narrative of what we live inside, and how do we write that narrative? Do we own the story, or does the story own us?

10. When Aldo Leopold wrote *Sand County Almanac*, he suggested that humans should shift their role from "conqueror of the land-community to plain member and citizen of it." Is our responsibility to the planet due to our ownership of the planet or our participation with the planet's natural systems? Are we rulers or community members of planet Earth? Give some examples from the book or that you see in your own life to support your answers.

11. As of 2019, agreement among climate scientists that climate change is real and affected by humans exceeded 97 percent. Despite this strong foundation of agreement in the scientific community, there are climate change deniers. What do you think motivates people to contradict what science and their own lived experiences are telling them?

12. Can an effective environmental movement have people and organizations with conflicting goals and ideals? Explain your answer.

13. Do you think it's more important to act individually or collectively? Will we have more success fighting smaller battles or large ones? Is it possible to do all these things simultaneously?

14. The text gives examples of different approaches to climate crisis, some softer and friendlier than others. What is the difference between a nonsolution and a real solution?

15. What can we learn from the abolitionist and civil rights movements, and how does this learning apply to turning the tide of climate change now?

Part III: What Happens Next

"You can help decide what happens next"—Klein, introduction to *How to Change Everything*

16. Some scientists advocate geoengineering as a way to solve our climate crisis. Since human tinkering with the planet created the climate crisis, do you think human tinkering is the solution? Explain your answer.

17. We know that geoengineering poses risks. Do the advantages outweigh the risks? How does that question get answered, and by whom?

18. Klein suggests that shifting from an economy based on fossil fuels to one without carbon emissions would create jobs in certain sectors. We know that COVID-19 has created an economic downturn and that people need jobs. Should we work toward creating new jobs even if it is expensive for our federal government to do so? Are new jobs a good idea in the short term, the long term, both, or neither?

19. Klein argues that one of the biggest challenges humans have faced is not finding alternative energy sources, but rather using less energy. This will require changing how we live, what we consume, and the ways we travel. Imagine your future. What does your resource use look like, and is it different from your resource use habits now? Does it include climate considerations?

20. Do our obligations to family, community, and country extend to climate? Explain your answer.

21. Chapter nine is titled "A Toolkit for Young Activists" and has practical suggestions for actions that will affect the climate that is already shaping your life. What sort of actions will you take? What kind of activist are you?

Conclusion and Afterword

"Now is the time to rethink how we live, eat, travel, do business, and earn our livelihoods"—Klein, conclusion to *How to Change Everything*

22. You are living through a turning point. How is a turning point different from a tipping point?

23. Throughout this book, you are confronted with the idea of "away": how near or how far people are from one another, climatic events, sacrifice zones, and resources. With regard to our planet, however, we are living in a closed system of matter transfer. Matter changes form, but is not created or destroyed. Goods move from one place to another, then break down or get turned into new goods, but do not disappear. There really is no "away." How does recognizing this fact help us decide how we deal with our climate crisis?

Standards and Question Type Alignment of Discussion Questions

Common Core ELA Standards	
CCSS.ELA-LITERACY.RST.6-8.1	7, 12, 14, 15, 20, 21, 22
CCSS.ELA-LITERACY.RST.6-8.2	4, 6, 13, 23, 19
CCSS.ELA-LITERACY.RST.6-8.4	3, 11, 16
CCSS.ELA-LITERACY.RST.6-8.6	18
CCSS.ELA-LITERACY.RST.6-8.8	18, 17
CCSS.ELA-LITERACY.WHST.6-8.9	1, 2, 5, 8, 9, 10

Learning for Justice Standards	
Identity	1, 21, 20,19
Diversity	5, 12, 15

Justice	4, 6, 7,15, 23
Action	2, 6, 14, 15

Question Type	
Convergent (or closed)	3, 14
Divergent (or open)	4, 6, 15, 23, 22,18
Evaluative (or application/synthesis)	2, 8, 12, 13,19, 21
Rhetorical	1, 5, 7, 9,10,11, 16, 17, 20

Extension Activities

In addition to the excellent tools and ideas in chapter nine, students can use the activities that follow to learn about the climate problem's causes, impacts, and levers for change.

1. The Science of Greenhouse Gases. It can be difficult to accurately understand how increasing levels of greenhouse gases can result in increased global temperatures. To supplement the book's textual descriptions of the greenhouse effect and the figure in chapter four, you can use the free PhET interactive simulation on the greenhouse effect at https://phet.colorado.edu/en/simulation/greenhouse.

PhET, a project of the University of Colorado at Boulder, is an award-winning collection of free, research-based computer simulations for science learning; the Greenhouse Effect simulation can be used in a browser window or in Java. This PhET simulation about greenhouse gases allows learners to experience two important ideas.

- First, the tab labeled "Greenhouse Effect" allows you to see sunlight photons being absorbed by Earth's surface and the resulting infrared photons that are created.

- Second, the tab labeled "Photon Absorption" connects the behavior of those infrared photons in the first tab (appearing to be trapped, bouncing around for some time in the atmosphere before exiting the Earth system) and the properties of individual greenhouse gas molecules.

A free account with PhET will allow teachers to access and download prepared activity guides; we suggest starting with “Investigating Climate Change at the Macroscopic and Microscopic Level” by Amy Rouinfar (aimed at middle grades and available at https://phet.colorado.edu/en/contributions/view/4038). Although this activity begins with an exploration of the PhET Glaciers simulation at https://phet.colorado.edu/en/simulation/glaciers, your students will be able to complete the Greenhouse Effect segment of the activity independently.

NGSS correlation: MS-ESS3-5 Earth and Human Activity; Practice 2.

2. Adopt a Tree/Tree Phenology. As Klein shows us in chapters seven and nine, trees are the original carbon-capture technology! Paying attention to trees’ care and well-being is one of the most powerful actions individuals can take to fight climate change, and nearly every student can find a tree near their home or school to investigate. Teachers can use nature observations as an authentic way to help students practice required literacy, numeracy, and scientific skills.

The study of life cycle events, such as the date of first flowers or first fruit formation in trees, is called phenology[1], and the events themselves are called phenophases. We can measure climate change on the local level by comparing the dates of phenophases to those of the past and to those being measured right now for the same species of plants in other locations. To collect clear, compelling phenology and other environmental data, have your students try to select an established tree (at least six feet tall and shaped like a tree rather than a shrub) that is deciduous (loses its leaves each year).

You and your students could even contribute to citizen science projects that collect phenophase data from across the country! Two great projects are the Chicago Botanic Garden’s Budburst (see their middle grades educator resources at https://budburst.org/educators/grades-5-8) and Nature’s Notebook from the USA National Phenology Network (https://www.usanpn.org/natures_notebook).

- Even if you don’t require students to contribute their data to these projects, you can use some or all of their data collection frameworks (see an example set of questions from Nature’s Notebook about white oak, or *Quercus alba*, at

[1] Please note that the similar-sounding word *phrenology* is used to describe when people have attempted to measure the bumps on human heads to determine mental traits or abilities. Head topology is not correlated with or a causative factor in intelligence/personality, and the practice of phrenology has been used historically to justify prejudice and oppression of minoritized groups of people.

https://mynpn.usanpn.org/npnapps/species/Quercus/alba) to capture changes from season to season. Consider monthly visits.

- To support your students in keeping track of their data, help students create a booklet or an intentional space in a bound notebook. Just like practicing scientists, they'll be able to refer back to their previous observations easily.

- To reinforce the idea that ecosystems, including those heavily populated by humans, consist of interdependent species, you might also have your students document evidence of animals that use or have interacted with the tree. Your students may find anthills, squirrel dreys, worm castings, or bird nests, even in heavily urbanized areas. Students can use their findings to write arguments from evidence or use the internet to find out more about how climate change may be affecting the interacting species or species similar to those in your location.

Additionally, you can consider having students work through processes of estimation, fractions, and proportional thinking (using numbers of leaves on trees, for example), descriptive writing, or making time lines.

NGSS correlations: MS-ESS3-5 Earth and Human Activity; MS-LS2-1 Ecosystems: Interactions, Energy, and Dynamics; Practice 3, 4.

3. Why Climate Change Isn't a Hoax. To help students parse the histories of climate change science and public messaging, have students make a time line that follows the events described in chapter five. This history is new for many folks and it's not a comfortable one to learn, so be prepared to support students through complicated emotions and remind them that we have the technology and knowledge needed to solve the climate crisis.

If you're interested in a more narrow focus, you might create a time line for the decade covered by Nathaniel Rich's article (highlighted in chapter five and summarized by the Pulitzer Center in the study guide available at https://pulitzercenter.org/sites/default/files/study_guide_pdf_1.pdf).

This is also an excellent opportunity for students to practice using evidence to analyze claims. Ask students to organize facts from chapter five (the evidence) that help us understand why one or more of the following common statements on climate change aren't accurate (the claims):

- “Human nature is to blame for our inaction on climate change.”
- “Climate change isn’t real.”
- “Fossil fuel companies didn’t understand the link between fossil fuels and climate change in the 1970s and 1980s.”

NGSS correlation: Practice 7. Common Core ELA correlations: CCSS.ELA-LITERACY.W.6.1.B, CCSS.ELA-LITERACY.W.7.1.B, CCSS.ELA-LITERACY.W.8.1.B

4. Creative Solutions for Energy Policy. The specifics of proposals like the Green New Deal include ideas and technologies that might not yet be familiar to you, your students, and members of your community. To explore these ideas, ask students to research one potential component of green energy policy, and then perhaps communicate to others in your community using an artistic modality (infographic, cartoon, poem, song, or something else!). For more ideas about green art, see chapter nine. Alternatively, you can focus your and your students’ efforts on a high-leverage solution right in your school building.

One reliable resource for beginning to research climate solutions is the website of Project Drawdown, an organization that is dedicated to researching and reporting on climate solutions to help the world reach the point in time (“drawdown”) when greenhouse gas levels stop rising and start to decline as a result of changes in human activity. The table below correlates some of Klein’s descriptions of what we need in a Green New Deal with pages on drawdown.org, each focusing on a specific technology. Click the magnifying glass on the webpage to access the search function, then type in the name of a solution to read more.

Depending on your students’ ability to parse technical texts, you may choose to prepare summaries of a subset of the description pages, or teach one or more texts explicitly through community or small-group close reading.

Described in chapter eight of *How to Change Everything* as . . .	Search Project Drawdown (drawdown.org) for solutions like . . .
“Upgrading existing buildings”	Building retrofitting Smart thermostats Solar hot water
“Constructing new [buildings] to make efficient use of energy and water”	Net-zero buildings Building automation systems

“Supporting clean manufacturing practices”	Alternative cement Recycled paper Recycling
“Investing in more efficient power grids”	Grid flexibility Microgrids
“Working to make electricity affordable and clean”	Concentrated solar power Onshore wind turbines Offshore wind turbines LED lighting
“Investing in public transportation, high-speed trains, and vehicles that do not emit greenhouse gases”	Public transit High-speed rail Electric cars Efficient ocean shipping
“Wind and solar power that is produced by many sources and, where possible, owned by communities”	Distributed solar photovoltaics Micro wind turbines Distributed energy storage
“Beautifully designed, racially integrated, zero-carbon sustainable urban housing”	Bicycle infrastructure Green and cool roofs Electric trains Low-flow fixtures
“Empower Indigenous communities, small farmers and ranchers, and folk who practice sustainable fishing”	Indigenous peoples’ forest tenure Plant-rich diets Abandoned farmland restoration Tree plantations (on degraded land) Regenerative annual cropping Coastal wetland protection Coastal wetland restoration

If students research a variety of solutions, you could create an opportunity for them to share work and get feedback before finding a method for them to share revised work with others in your community. Consider asking leaders at your local library, an independent restaurant or coffee shop, or community center if they’d be interested in hosting a gallery of student work, along with posted “artist reflections” in which students describe their experiences in learning about—and communicating—the value of these climate solutions.

Please note that Project Drawdown ranks solutions by their potential impact (see “Table of Solutions” under the “Solutions” menu, then follow the instructions to sort solutions in

the table). If your students are each selecting different solutions, maintain classroom harmony by emphasizing that the rankings are useful and interesting, but that each of these solutions are important. It will take lots of different actions to create meaningful change, just as our society has addressed the COVID-19 pandemic by taking many different actions simultaneously (supporting vaccination, wearing masks, staying home if sick, physically distancing, limiting travel, washing our hands).

If you'd rather have your class work together on a specific solution and focus on collecting data to inform policy more locally, we strongly recommend working on learning about food waste at your school or community. Reducing food waste is a vital solution to the climate crisis (see https://www.drawdown.org/solutions/reduced-food-waste). Not all students and families have the same degree of agency and choice over the foods they eat at home, making the school cafeteria (rather than home) an ideal place to think about minimizing your community's carbon footprint. Your students can do a food waste audit in your school cafeteria by measuring the mass or volume of food waste in bulk or, for a lower-contact option, creating a survey that students fill out at the end of each school mealtime. You and students might analyze the data and use it to create policy recommendations for the cafeteria.

Another option is to explore pathways in your local community for reducing food waste. Is there a restaurant donorship program for prepared food that didn't sell? How about a composting program for residential or commercial areas? In keeping with Klein's focus in this book, steer students away from a singular focus on individual actions like learning to cook at home with fruits or vegetables that are past their prime. Such skills and actions are important, but we owe it to our students to prioritize the power of collective action and systems-level solutions.

NGSS correlations: Practices 1, 3, 8.

5. Make Your Voice Heard. Once students have learned about climate change and what it will take to stop it, writing letters is a natural progression. Klein reminds us that "activism does not have to be dramatic to be meaningful" and letter-writing allows students to engage in meaningful communication with those in power while simultaneously practicing the discourses of power. We've had the most success when we've allowed students a great deal of leeway in choosing the audience of their letter and have supported students in doing preliminary research online about the history of the politician, business, lobby, or school leadership they're interested in addressing. This helps students demonstrate in their writing that they are knowledgeable about their audience, and helps them focus the request they make in their letter. Be sure to require

students to include three or more citations to data and research to support their positions, perhaps from the work they've done in the activities suggested above.

NGSS correlations: Practices 7, 8. Common Core ELA correlations: CCSS.ELA-LITERACY.WHST.6-8.1.B, C, & D; CCSS.ELA-LITERACY.WHST.6-8.4

6. What is Your *Buen Vivir*? One vital thread running through *How to Change Everything* is the importance of coming to terms with our current perspective on consumer culture. Have your students read the passage on the idea of *buen vivir* in chapter eight and focus on the sentence below:

> "*Buen vivir* is about the right to a good life [together], where everyone has enough, instead of the more-and-more life of constant consumerism."

After defining what consumerism means in the quote, have your students explore their own current ideas of *buen vivir* by journaling. Next, have them analyze the stories of several of the activists and activist groups that Klein highlights in *How to Change Everything.* What might those folks name as important components of their *buen vivir*? How might climate stability or climate change factor into those answers? Be sure to choose a variety of perspectives.

"Having enough" can be a socially sensitive topic for students and families, so if you and your students want to consider stories beyond Klein's book, consider using published interviews or curriculum texts your students are already reading rather than personal interviews. Often, looking outside ourselves and examining the experience of others is a more equitable and comfortable approach in a classroom.

Throughout their investigations, remember to have students focus on questions of context and hidden costs:

- What does "having enough together" on this planet mean to different people?
- How have those ideas been affected by their personal identities and histories? By climate change?
- What hidden costs or sacrifice zones are created by our culture's constant desire for the latest and greatest fashion or tech?
- Do your students' ideas of *buen vivir* change as they learn more about how others are differentially affected by consumerism and its resultant climate change?

- What ideas can your students generate for working toward *buen vivir* locally (More video game rentals at the local library? Expanded services for people experiencing homelessness?) or globally?

Conversations like this can sometimes feel judgmental and quickly become divisive. Collaboratively establishing or revisiting conversational norms before this discussion may be a way to ensure everyone participates comfortably and collaboratively in truly examining consumer culture and their own choices and choice-making habits. You may find it helpful to start from, and return to when necessary, a place of common ground among voices in the room. As students work through their thinking, aim to focus on presenting data (the stories Klein highlights of activists), which serve as reliable premises from which students may draw conclusions.

Common Core ELA correlations: CCSS.ELA-LITERACY.RST.6-8.4; CCSS.ELA-LITERACY.RST.6-8.9 (depending on other sources brought into investigation and discussion); CCSS.ELA-LITERACY.WHST.6-8.7 & 9; CCSS.ELA-LITERACY.WHST.6-8.10

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