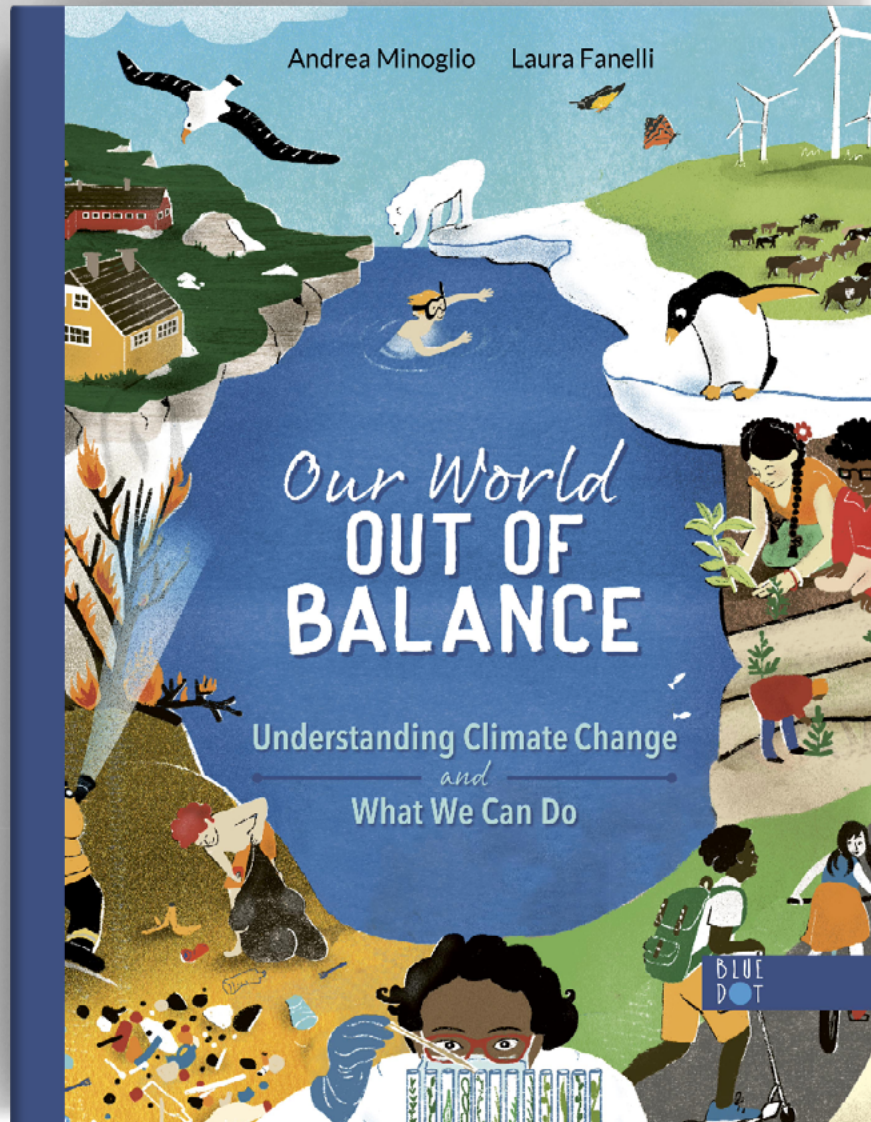




Your Teacher's Guide

from Blue Dot Kids Press



“This clear introduction to the what’s and why’s of environmental degradation balances sad facts with examples of what can and is being done. A solid pick . . . for its positive approach and breadth.”

—*Kirkus Reviews*

Our World Out of Balance: Understanding Climate Change and What We Can Do,
written by Andrea Minoglio and illustrated by Laura Fanelli
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Before Reading

Essential Questions

What is climate change? Climate change means increasing changes in many climate patterns over a long period of time. These changes include more or less rain, hotter or colder temperatures, more severe weather events, and rising sea levels.

How do humans contribute to climate change? Human activities impact the earth's climate in many ways. Cutting down trees, burning fossil fuels, using chemicals on our land, and producing things that are only used once before being thrown away all contribute to climate change.

What are some of the worst effects of climate change on our world? Climate change affects almost every part of earth in some way. Animals are going extinct; our polar ice is melting; fires, floods, and hurricanes are worse than ever before; and our coral reefs are slowly dying.

How can we help stop climate change? People can help in many ways. We can plant trees and flowers, use less energy in our homes, walk or bike instead of taking the car, and bring reusable bags to the grocery store. Kids can also learn about the wildlife around them and join citizen science groups working to reverse climate change.



Discussion

- Ask students to talk about what climate change means to them. What images or ideas come to mind when they hear the term climate change?

CLIMATE CHANGE = ?

- Now slowly look through the illustrations in the book. Make a list of challenges or problems you think the book will discuss. Now make a list of things people can do to help solve the problems of climate change.
- Discuss which of the pictures or ideas seem most relevant where you live. Which of the problems are happening or most likely to happen there? Why? What solutions seem most useful for your town or in your lives?

Word Work

Study the new vocabulary words.

- **Carbon dioxide (CO₂):** A heavy, colorless gas that is part of breathing and decaying processes
- **Citizen scientists:** People who aren't professional, trained scientists but who help collect data used by scientists.
- **Deforestation:** The cutting down of lots of trees or whole forests in order to use the land for something else
- **Fossil fuel:** A fuel (such as coal and natural gas) formed long ago from dead organisms; limited because more cannot be made
- **Greenhouse effect:** Earth's atmosphere trapping some of Earth's heat, like glass holds heat inside a greenhouse
- **Intensive farming:** Producing as much as possible in as little space as possible; requires harmful practices including toxic chemicals and penning animals in tight spaces
- **Renewable energy:** Energy made from resources such as wind, water, and sun that nature can replace
- **Single-use plastics:** Plastics that can be used only one time and are then thrown away

Now look through the illustrations again. See if you can find examples of some of these words in the book.

During Reading

Reading Methods

Have students read the book aloud as a class, in pairs or small groups, or independently.

As they are reading, have students write down vocabulary words they don't know so you can discuss them together.

You may want to read a few sections at a time, pausing to discuss or explore topics in-depth before reading the rest of the book.



Questions by Topic

- How did the authors organize each section of the book? Why do you think they chose that format?
- Which problem described in the book do you think is the most important to solve? What solutions would you like to try to address the problem?
- What are some of your favorite illustrations? Why do you like them?
- Why do you think plastic is causing so many problems? What do you think we should do about it?
- What do you think will happen to our oceans if we don't slow down climate change?
- What are some of the worst impacts to our land and our cities caused by climate change? Which of these do you think has the biggest impact on the area where you live?



Questions by Page

- Read page 9. What was the problem with Earth's atmosphere that people all over the world came together to address over thirty years ago? What did they do?
- On pages 18 and 19, read about heat islands. What are some of the reasons that cities get so much hotter than other areas do?
- Read pages 24 and 25. What is biodiversity? What are some reasons why it is important to protect our wildlife?
- Read pages 40–43. What is smog? What are some of the negative consequences of smog?
- Read pages 44–47. Why are many of our coral reefs turning white? What does this mean for our world?
- Read pages 60–63. Pretend you are the mayor of your town. What new rules, laws, departments, or programs might you create to lessen how much trash and litter your town has?

How to Help

Read through the **How People Are Helping** sections of the book. Discuss some of the organizations that address climate change.

Working in pairs, research one of the organizations from **How People Are Helping** sections of the book or from **You Can Be Part of the Solution!** (p. 65). Share your research on posters or in online presentations with something like Google Slides.

Have students read the **How You Can Help** sections of the book. As a class, decide on one thing you can do together to address climate change. Organize a plan and help students work through the details of turning their ideas into one concrete action. You may need to ask for help from an administrator, a parent or community member with relevant skills, or one of the organizations listed on page 65.

After Reading

Demonstrate Comprehension

Demonstrate comprehension by describing the “life cycle” of one of the issues presented in the book. Choose one of the following problems:

- **Rising sea levels**
- **Melting ice**
- **Too much trash**
- **Shrinking forests**
- **Oceans of plastic**

Make a comic strip illustrating the problem as it goes from bad to worse over time. Show all the factors that contribute to the problem. Use your last panels to show some possible solutions for addressing the problem. If you have access to technology, make your comic strip on [Powtoon](#), [Prezi](#), or [Google Slides](#).

Research

1. What is the greenhouse effect? Why do you think it is called that?
2. Research an animal that has recently gone extinct (within the last twenty years). What were the causes of its extinction? What effects does its extinction have on other animals?
3. What are the differences between a hurricane and a typhoon?
4. What are some of the worst droughts in history? Where did they occur, and how did they impact the people and wildlife near them?
5. What countries are the best at recycling and reducing trash? How do they conserve or reuse materials and energy?



Citizen Science Activities

Citizen science, also called **community science**, happens when people study the world around them and send the data they collect to scientists. **Citizen scientists** are people—young or old, who have attended a lot of school or very little, from cities and from small towns—who help collect data for research projects and help to answer real scientific questions.

In the Classroom

- » Study biodiversity in your area by planning a **BioBlitz** at your school. During a BioBlitz, participants record pictures and try to identify as many species as possible in the target area. Skilled identifiers assist students in making correct identifications. Use the app [iNaturalist](#) or, for younger students, [Seek](#).

Students can explore their school campus, or even their neighborhoods or local natural areas (with parent support). The “[Setting Up a Project in iNaturalist](#)” describes how teachers can set up a BioBlitz.

- » Saving energy in your home uses fewer of the earth’s resources and also saves your family money. An energy audit is when a homeowner evaluates how they are using energy and then looks for ways to reduce or improve their energy use. Use [this energy audit from the Ohio Energy Project](#) to think about energy use at home. You may need some help from an adult to collect the information. Have a class discussion about the audits and think about ways families might conserve energy.
- » Refer to **You Can Be Part of the Solution!** (p. 65) in *Our World Out Of Balance: Understanding Climate Change and What We Can Do*, for a list of even more citizen science initiatives to get involved with!

Taking Action

- » Turn an empty field or an unused part of your school campus into a **pollinator garden**. Pollinator gardens attract butterflies and other insects that help promote plant health and biodiversity. Pollinator gardens support native plants and make your school look beautiful as well. The article “[Creating a Pollinator Garden at Your School](#)” describes how to get started, where to find help, and all of the benefits of creating a pollinator garden.
- » **Eating vegetarian** uses fewer of the earth’s resources than eating meat does and is a healthy lifestyle choice. Explore vegetarian options by holding a blind taste test in the classroom. Purchase some plant-based meat products. Also cook some beef burgers or other types of animal meat. Try the different foods and rate them; then reveal which are animal meat and which are plant-based products.
- » Find a location on your school campus that could support some **trees**. If you become a member of the [Arbor Day Foundation](#), they will send ten free baby trees suited to your location for planting. Or support the planting of trees in other parts of the world through [One Tree Planted](#). Have a school bake sale, a car wash, or some other type of fundraiser to raise money for trees in countries that need them the most.
- » Organize a **walk/bike to school day** at your school. Make sure to include your school administration and local law enforcement to plan a safe and well-organized event. Create signs outside the entrances to your school encouraging walking and biking as alternatives to burning fossil fuels.
- » Plan a walk around your school grounds or at a local park or natural area. Bring plastic bags and gloves so you can **clean up any litter** you find. Adult volunteers can help make this a safe and productive event.
- » Research **renewable energy** sources like solar, wind, geothermal, and nuclear power. Compare the pros and cons of various sources, including nonrenewables like coal and natural gas. Think about your community, its resources and its power needs. Write proposals for using a new energy source to the mayor or the city council. Ask them to write a persuasive speech supporting one energy source and explaining why their choice makes the most sense for your community. Make this a more relevant experience by inviting a member of the city council or someone with experience in the energy sector to listen and respond to the speeches—or actually submit the proposal or present the speech at a government meeting!





[Blue Dot Kids Press](#) inspires curiosity with beautifully crafted stories that connect us to each other and the planet we share. Written and illustrated by impassioned **storytellers and artists from around the world**, our books engage young readers' innate sense of **wonder and empathy**, connecting them to our global community and **the pale blue dot we call home**.

As an **independent, mission-driven**, children's publisher based in San Francisco, California, and Wellington, New Zealand, our **passion for nature and its stewardship** are evident in every book we publish—as well as in our business practices.

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