

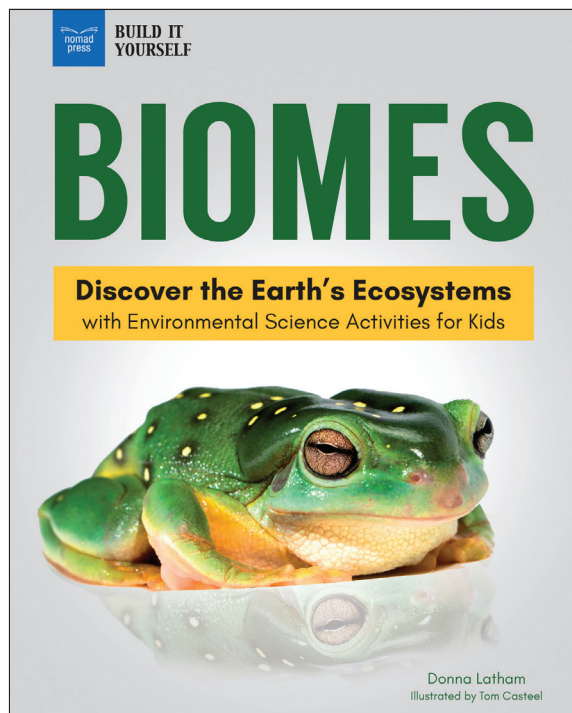


CLASSROOM GUIDE

Biomes: Discover the Earth's Ecosystems with Environmental Science Activities for Kids

Nomad Press offers concise classroom guides to help educators explore content-related topics with students and encourage them to develop ideas in meaningful ways. Includes Essential Questions and Common Core Connections.

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Age: 9–12

Grade: 4–6

Softcover: 9781619307513, \$17.95

Hardcover: 9781619307483, \$22.95

eBook: all formats available, \$12.99

Specs: 8 x 10, 128 pages, color interior

Focus: Environmental Science

GRL: V

What's the difference between a desert and a rain forest? A tundra and a coniferous forest? These are all examples of biomes, and they are all home to plants and animals that are uniquely adapted to live in those environments!

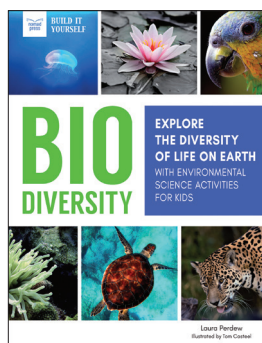
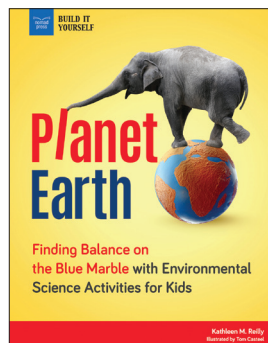
In *Biomes: Discover the Earth's Ecosystems with Environmental Activities for Kids*, middle school kids journey across the planet and visit the world's nine terrestrial and aquatic biomes to learn about the distinctive climates, geologies, resources, and organisms that can be found there. Kids will wander through forests, sizzle in deserts, shiver in the tundra, plunge beneath the seas to explore coral reefs, and slog through marshy waters.

Biodiversity is part of a set of four Build It Environmental Science books that explore the history and science of the planet and all that live on it through hands-on STEM activities and real-life environmental connections. Other titles in this series are *Planet Earth*, *Garbage*, and *Biodiversity*.

Learn more about *Biomes* at
nomadpress.net/nomadpress-books/biomes



ALSO IN THE ENVIRONMENTAL SCIENCE SET



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PB: 9781619307476, \$17.95

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ESSENTIAL QUESTIONS TO ASK

KEY VOCABULARY

adaptation, biodiversity,
biosphere, coniferous,
deforestation, germinate,
natural resource

BEFORE READING

1 Establish Background Knowledge

- a What type of biome do you live in? How does this biome affect your lifestyle?
- b Which biome would you most like to live?
- c How are living things adapted for life in the coniferous forest? In the arctic regions? In the deserts?

2 Skill Introduction

- a What do you do when you come to a word or phrase you do not know?
- b How do photographs and videos help someone learn about a topic?

CCC: CCSS.ELA-Literacy.L.7.4a Use context (e.g., the overall meaning of a sentence or paragraph; a word's position or function in a sentence) as a clue to the meaning of a word or phrase.

DURING READING

1 Check for Understanding

- a How does Earth sustain life? What kinds of things put this sustainability in danger?
- b Why are tropical rainforests called “the lungs of the planet?” What happens if the rainforests are destroyed?
- c What changes will occur if the desert continues to be Earth’s fastest growing biome?
- d How are grasses and hooved animals adapted to thrive in wide-open spaces? How are arctic animals adapted for the freezing cold? What are some ways you need to change when you move from one biome to another, and how is this different from animals?

CCC: CCSS.ELA-Literacy.RST.6-8.5 Analyze the structure an author uses to organize a text, including how the major sections contribute to the whole and to an understanding of the topic.



The variety of biomes on Earth is pretty impressive. You can get a sense of the scope and beauty of our planet in this video.
<https://www.youtube.com/watch?v=hly0ZlyPPDg>



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ESSENTIAL QUESTIONS TO ASK

AFTER READING

1 Summary and Expansion

- a What happens when ecosystems change?
- b In the interconnected web of life, how do warming temperatures in the Arctic impact the entire planet?
- c How does ocean depth impact biodiversity? Why should humans who live on land care about what happens deep in the ocean?
- d Why do we think about everything on Earth being connected? How does this help us find solutions to global problems?
- e Why do we need to also consider microscopic organisms when considering the health of the planet? How do microbes contribute to life on Earth? What might happen if the microbiome were to disappear?
- f Why do scientists vary on the number of biomes on the planet? What role does debate play in scientific inquiry?

CCC: CCSS.ELA-Literacy.RST.6-8.9 Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.

CCC: CCSS.ELA-Literacy.SL.7.2 Analyze the main ideas and supporting details presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how the ideas clarify a topic, text, or issue under study.

CCC: CCSS.ELA-Literacy.SL.7.3 Delineate a speaker's argument and specific claims, evaluating the soundness of the reasoning and the relevance and sufficiency of the evidence.

CCC: CCSS.ELA-Literacy.WHST.6-8.2b Develop the topic with relevant, well-chosen facts, definitions, concrete details, quotations, or other information and examples.

COMMON CORE CONNECTIONS

Grade: 7 Language CCSS.ELA-Literacy.L.7.3,3a,4,4a,4b,4c,4d,5,6

Grade: 6-8 Science & Technical Subjects CCSS.ELA-Literacy.RST.6-8.1,2,3,4,5,6,7,8,9,10

Grade: 7 Speaking & Listening CCSS.ELA-Literacy.SL.7.1,1a,1c,1d,2,3,4,5,6

Grade: 6-8 Writing HST CCSS.ELA-Literacy.WHST.6-8.2,2a,2b,2d,2f,7,8,9,10



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COMMON CORE CONNECTIONS

Grade: 7 Language

CCSS.ELA-Literacy.L.7.3,3a,4,4a,4b,4c,4d,5,6

3 Use knowledge of language and its conventions when writing, speaking, reading, or listening.

3a Choose language that expresses ideas precisely and concisely, recognizing and eliminating wordiness and redundancy.

4 Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 7 reading and content, choosing flexibly from a range of strategies.

4a Use context (e.g., the overall meaning of a sentence or paragraph; a word's position or function in a sentence) as a clue to the meaning of a word or phrase.

4b Use common, grade-appropriate Greek or Latin affixes and roots as clues to the meaning of a word (e.g., belligerent, bellicose, rebel).

4c Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning or its part of speech.

4d Verify the preliminary determination of the meaning of a word or phrase (e.g., by checking the inferred meaning in context or in a dictionary).

5 Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.

6 Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.

Grade: 6-8 Science & Technical Subjects

CCSS.ELA-Literacy.RST.6-8.1,2,3,4,5,6,7,8,9,10

1 Cite specific textual evidence to support analysis of science and technical texts.

2 Determine the central ideas or conclusions of a text; provide an accurate summary of the text distinct from prior knowledge or opinions.

3 Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.

4 Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades

6–8 texts and topics.

5 Analyze the structure an author uses to organize a text, including how the major sections contribute to the whole and to an understanding of the topic.

6 Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text.

7 Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).

8 Distinguish among facts, reasoned judgment based on research findings, and speculation in a text.

9 Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.

10 By the end of grade 8, read and comprehend science/technical texts in the grades 6–8 text complexity band independently and proficiently.



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COMMON CORE CONNECTIONS

Grade: 7 Speaking & Listening

CCSS.ELA-Literacy.SL.7.1,1a,1c,1d,2,3,4,5,6

- 1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 7 topics, texts, and issues, building on others' ideas and expressing their own clearly.
 - 1a Come to discussions prepared, having read or researched material under study; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion.
 - 1c Pose questions that elicit elaboration and respond to others' questions and comments with relevant observations and ideas that bring the discussion back on topic as needed.
 - 1d Acknowledge new information expressed by others and, when warranted, modify their own views.
- 2 Analyze the main ideas and supporting details presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how the ideas clarify a topic, text, or issue under study.
- 3 Delineate a speaker's argument and specific claims, evaluating the soundness of the reasoning and the relevance and sufficiency of the evidence.
- 4 Present claims and findings, emphasizing salient points in a focused, coherent manner with pertinent descriptions, facts, details, and examples; use appropriate eye contact, adequate volume, and clear pronunciation.
- 5 Include multimedia components and visual displays in presentations to clarify claims and findings and emphasize salient points.
- 6 Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate. (See grade 7 Language standards 1 and 3 here for specific expectations.)

Grade: 6-8 Writing HST

CCSS.ELA-Literacy.WHST.6-8.2,2a,2b,2d,2f,7,8,9,10

- 2 Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.
 - 2a Introduce a topic clearly, previewing what is to follow; organize ideas, concepts, and information into broader categories as appropriate to achieving purpose; include formatting (e.g., headings), graphics (e.g., charts, tables), and multimedia when useful to aiding comprehension.
 - 2b Develop the topic with relevant, well-chosen facts, definitions, concrete details, quotations, or other information and examples.
 - 2d Use precise language and domain-specific vocabulary to inform about or explain the topic.
 - 2f Provide a concluding statement or section that follows from and supports the information or explanation presented.
- 7 Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.
- 8 Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation.
- 9 Draw evidence from informational texts to support analysis, reflection, and research.
- 10 Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.



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Activity

MAKE RECYCLED PAPER

This activity is pretty messy! After you create your own recycled paper, go outside to investigate your home turf in the next activity.

Caution: Have an adult help with the blender.

➤ **Rip scrap paper into teeny pieces.** Place about $\frac{1}{2}$ cup of it into a blender. Pour about 2 cups of hot water over the paper. Repeat this process until the blender is halfway full. Cover the blender and set it at a low speed. Mix the paper and water until it reaches a pulpy consistency. If the blender gets sluggish, add a bit more water.

➤ **Carefully take the pulp outside.** Spread newspaper on a flat surface, and place a towel or rag over it. Set it aside for a moment.

➤ **Place a window screen in a pan or on a baking sheet.** Pour the pulp over the window screen. Wiggle the screen back and forth until the pulp coats it. Gently lift the screen from the pan or sheet, and allow any excess pulp to drip off.

➤ **Set the screen on top of the towel and newspaper.** Keep the screen's pulpy side up. Layer a second towel or rag and more newspaper on top of the screen, creating a sandwich. Use a rolling pin or other tool to press on the sandwich from one end to another until you've wrung out all the water.

➤ **Spread out a third towel or rag in a warm, dry spot,** and carefully place the sandwich on top of it. Allow it to dry for 24 hours. If you live in a humid place, it will probably require more time.

➤ **When the paper is completely dry, peel the newspaper and towels away.** Use this homemade recycled paper in the activity on the next page.

Think About It

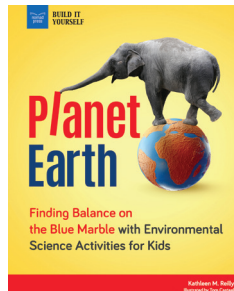
How might this method of recycling paper into new paper work for large amounts of paper? Could a factory use this process? What are some ways companies could change this process so they could work with recycled paper from an entire school?

Check out more titles and other great activities at nomadpress.net.

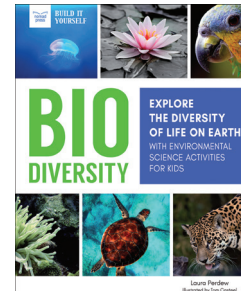
More Books About Environmental Science!



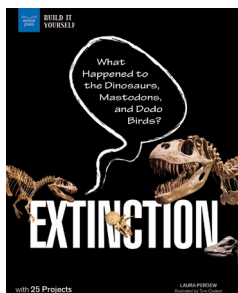
Author: Donna Latham



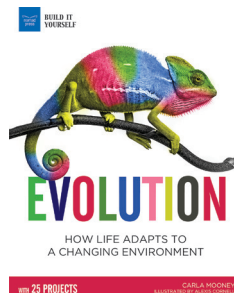
Author: Kathleen M. Reilly



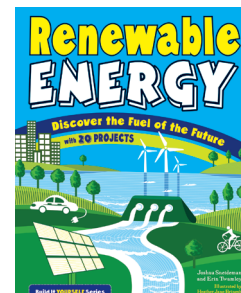
Author: Laura Perdw



Author: Laura Perdw



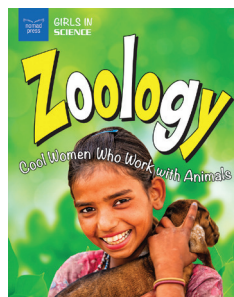
Author: Carla Mooney



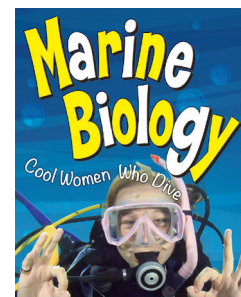
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Author: Jennifer Swanson



Author: Karen Bush Gibson

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