Teaching Searchlight Books™

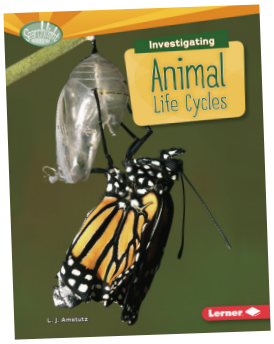
What Are Earth's Cycles?

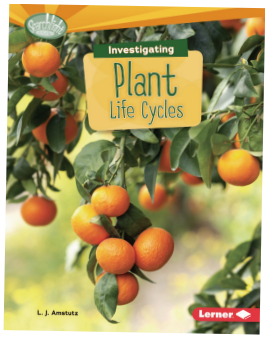
Interest Level: Grades 3–5
Reading Level: Grade 3

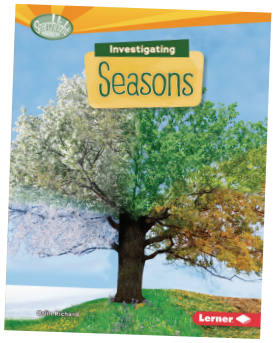
LERNER SOURCE™

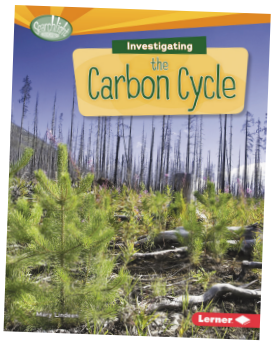
Titles in this series:

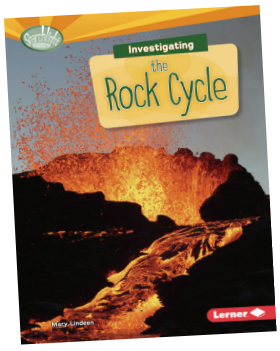
Investigating Animal Life Cycles
Investigating Plant Life Cycles
Investigating Seasons
Investigating the Carbon Cycle
Investigating the Rock Cycle
Investigating the Water Cycle

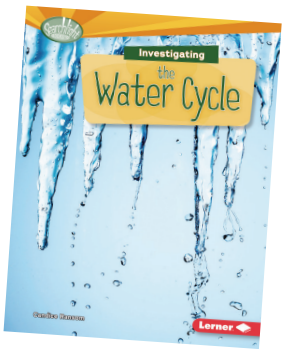












Standards

Next Generation Science Standards

3-LS1-1. Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.

3-LS3-1. Analyze and interpret data to provide evidence that plants and animals have traits inherited from parents and that variation of these traits exists in a group of similar organisms.

4-ESS1-1. Identify evidence from patterns in rock formations and fossils in rock layers to support an explanation for changes in a landscape over time.

Common Core State Standards

RI.3.1 Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.

RI.3.3 Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect.

RI.3.9 Compare and contrast the most important points and key details presented in two texts on the same topic.

RI.4.3 Explain events, procedures, ideas, or concepts in a historical, scientific, or technical text, including what happened and why, based on specific information in the text.

RI.4.9 Integrate information from two texts on the same topic in order to write or speak about the subject knowledgeably.

SL.3.4 Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly at an understandable pace.

Multiple Intelligences Utilized

Interpersonal, intrapersonal, linguistic, logical-mathematical, visual-spatial

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Lesson 1
Comparing Cycles

Purpose
Students will compare the content and presentation of two books on similar topics.

Materials
- What Are Earth's Cycles? series
- writing paper

Pretest
- What is comparing and contrasting?
- What can we learn when we compare and contrast?
- What are examples of things you can compare and contrast?

Read
- Select a book from the What Are Earth's Cycles? series.
- Read the first chapter aloud to students.
- Then ask these questions:
  - What is the first chapter about?
  - What did you learn in the first chapter?
  - What did the book tell you first? Second?
  - What pictures or diagrams did you see?
- On the board, create a list of students' answers.
- Select a second book from the What Are Earth's Cycles? series.
- Read the first chapter of this book aloud to students.
- Then ask these questions:
  - What is the first chapter about?
  - What did you learn in the first chapter?
  - What did the book tell you first? Second?
  - What pictures or diagrams did you see?
- On the board, create a second list of students' answers.

Discuss, Part 1
- Ask students to look at both lists and to think back to what they heard and saw in the books.
- How are these books similar?
- What do both of these books talk about?
- How is their order or organization similar?
- How are the pictures or diagrams similar?
- How are these books different?
- How is their order or organization different?
- How are the pictures different?
- Create a third list on the board to record the differences.

Writing
- Pass out writing paper to students. Explain that they'll be writing two paragraphs. One paragraph will discuss the ways these books are similar. The second paragraph will talk about how the books are different.
- On the board, write a topic sentence for the first paragraph.
- Ask students to think about ways the books are similar. Encourage them to look at the lists on the board for ideas. Use students' ideas to write the three body sentences of the paragraph. Then ask students to provide a concluding sentence for the paragraph.
- Next, ask students to think about ways that the books are different.
- Give students time to write the second paragraph on their own.

Discuss, Part 2
- Why do you think these books share similarities?
- Why do you think these books are different in some ways?
- Why is it important to talk about the ways that books are similar and different?

Evaluate
- Evaluate students' first paragraph for completion. Evaluate the second paragraph for understanding, paragraph structure, and writing mechanics.

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Lesson 2
Stages of a Cycle

Purpose
Students will find real-life examples of nature's cycles.

Materials
- What Are Earth's Cycles? series
- Find a Stage p. 6

Pretest
- What is a cycle?
- What are cycles that you've seen today?
- Is it possible to see a whole cycle at the same time? Why or why not?

Read
- Select a book from the What Are Earth's Cycles? series. Read the book aloud to the class.
- Ask these questions:
  - What cycles did the book describe?
  - Which of these cycles have you seen in real life?
  - What are the stages of a cycle?
  - What is an example of a cycle?
  - What is an example of a stage in that cycle?

Activity
- Explain to the class that most of the time, we can't see cycles all at once. Instead, we see different stages of a cycle. For example, in the seasons cycle, we can only see evidence of one season at a time. It can't be both winter and summer at the same time.
- Pass out Find a Stage p. 6 to students.
- Think of a cycle mentioned in the book that is visible from your classroom. Then look for evidence of a stage in that cycle. For example, you might be able to observe a stage in the seasons by looking at a tree's red leaves in fall. You might see the adult stage of an animal's life cycle by observing a classroom pet. Use this example to lead students in completing Find a Stage p. 6.

Independent Practice
- Pass out clean copies of Find a Stage p. 6 to students.
- If possible, ask students to repeat the Find a Stage activity at home. Challenge them to find evidence of a cycle's stage in their own homes. For example, they might focus on rocks they find in their backyards or a plant growing in a window.
- If students aren't able to complete this task as homework, give them time to work in class. Challenge them to think of a cycle stage present in their home.

Discuss
- What is a cycle?
- What are examples of cycles we see every day?
- Why do you think it's important to know the stages in a cycle?

Evaluate
- Review Find a Stage p. 6 for accuracy, understanding, and completion.

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Lesson 3
Drawing Cycles

Purpose
Students will discover and draw a cycle from everyday life.

Materials
- What Are Earth's Cycles? series
- Draw a Cycle p. 7
- crayons
- pencils

Pretest
- What is a cycle?
- What cycles have we already learned about?
- How can you tell if something is a cycle?

Read
- Read aloud a book from the What Are Earth's Cycles? series.

Discuss
- What cycles does the book discuss?
- What is a cycle?
- How can you tell if something is a cycle?

Activity
- Ask students to think about other cycles they've seen in their lives—in nature or otherwise. You might provide examples such as the laundry cycle (wear clothes, get clothes dirty, put clothes in wash, wash clothes, and fold clothes) or the cycle of a school day. Allow students time to brainstorm ideas with their neighbors.
- Using student suggestions, create a list of cycles on the board. Avoid including cycles that students have already read about in the book.
- Choose one cycle from the list. Make a list of each stage in this cycle. Then, on the board, draw a diagram of this cycle, arranging the stages in a circle with arrows.
- Pass out Draw a Cycle p. 7. Ask students to choose a cycle from the list or think of another cycle on their own. Give students time to list the cycle stages and then draw a diagram of the cycle on their paper.

Optional
- Send clean copies of Draw a Cycle p. 7 home with students. Ask students to find, describe, and draw a cycle in their own homes.

Writing
- After students complete Draw a Cycle, ask them to write a paragraph explaining each stage in the cycle.

Evaluate
- Review students completed Draw a Cycle pages and evaluate their paragraphs for correct sequencing, understanding of cycles, and strong writing mechanics.

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Lesson 4
Create a 3D Cycle

Purpose
Students will create a 3-D model of a cycle found in nature.

Materials
- What Are Earth's Cycles? series
- Create a 3-D Cycle p. 8

Pretest
- What is a cycle?
- What cycles have we learned about?
- What is a 3-D model?
- What are ways you can make a 3-D model?
- Why is it helpful to make 3-D models?

Read
- Read aloud one book from the What Are Earth's Cycles? series.

Discuss
- What cycles does this book talk about?
- Which cycles are easiest to see in real life?
- What are other cycles we've learned about?

Project
- Tell students that they will be choosing cycles and then creating 3-D models to show each stage of their cycles.
- Provide examples of 3-D cycle models. For instance, a student doing the seasons cycle might create four scenes in a shoe box—one scene for each season. Ensure that students understand the difference between a 2-D drawing and a 3-D model.
- Pass out copies of Create a 3-D Cycle and assign a due date. Give students time out of class to complete their models.

Present
- When students turn in their models, display them around the classroom.
- Ask students to stand next to their models. Then invite parents, teachers, or other classes to visit and observe the models. Encourage them to ask students about the cycle and model that they have created.

Evaluate
- Evaluate students' 3-D models for evidence of a complete cycle, understanding and execution of a 3-D model, and understanding of the cycle's stages.

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Name _____ **Date** _____

Find a Stage

Name of the cycle: _____

Stage of the cycle: _____

Where did you find this stage of the cycle? _____

In the space below, draw a picture of the stage that you found.

In this cycle, what stage comes before the stage you found? _____

What stage comes after? _____

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Name _____ Date _____

Draw a Cycle

List the stages in this cycle.

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

Below, draw a diagram of the cycle. Make sure you include each stage.

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Name _____ **Date** _____

Create a 3-D Cycle

In our class, we've been learning about cycles in nature. We've read about cycles such as the water cycle and the rock cycle. Now it's your turn to teach others!

Choose a cycle that we've learned about in class: _____

List each stage of the cycle below.

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

Now create a 3-D model of this cycle. Make sure to include every stage of the cycle in your 3-D model.

Be prepared to display and answer questions about your model in class.

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