

Day 8: What Are Ecosystems?



Mini-Lesson

Today is a time to practice previously taught reading strategies as needed.



Inquiry Circles

Teams determine which questions on the Inquiry Charts still need to be answered or need more information.



Guided Science Investigation

Children prepare for a “gallery walk” as they identify and discuss the living and nonliving components in different environments and are introduced to the concept of an ecosystem.

Literacy Strategy: practice reading for specific information on a website and using text features.

Reading TEKS

ELA.1.9F

CCSS

RI.1.10, RI.1.5

Science Concept: living things depend on each other and also on their nonliving environment for survival. The interactions between living and nonliving components make up an ecosystem.

Science TEKS

2018–19: 1.2D, 1.9B,

2024–25: 1.1E, 1.1F,
1.12B

NGSS

ESS-3A, 1-LS1-2

Science and Literacy Connection: scientists look very carefully for facts or information during an investigation or research because they know it can be used as evidence to explain and support their ideas or conclusions.

Mini-Lesson (15 minutes)



OVERVIEW

This mini-lesson provides opportunities for children to get additional practice using some of the strategies previously taught. Teachers are encouraged to use this time to best meet the needs of their learners. Perhaps your class needs more time with the mini-lesson from the day before, or you may choose to circle back to mini-lessons from a week ago. The choice is yours; we just ask that you use this time to practice using literacy strategies.

Teachers should determine if this mini-lesson will be facilitated with the whole team or a small team (i.e., a particular inquiry circle team) who needs additional support. If you are working with a small team, we suggest your other learners spend additional time within the inquiry circles.

Science Inquiry Circles (30 minutes)

OVERVIEW

Young scientists continue to work in their inquiry circle teams while embodying the role of a scientist conducting research.

MATERIALS

Each team needs:

- pencils
- team Inquiry Chart
- exploratory texts/media (or a Nearpod or similar tool created by the teacher; see the “Exploratory Texts and Media” spreadsheet for ideas)

Teacher needs:

- class Inquiry Chart about pill bugs
- exploratory text, website, or eBook about pill bugs to model the strategy (optional)

PROCEDURE

Each *italicized statement* below contains suggested wording the teacher may use for the lesson; additional teacher actions and considerations are in parentheses.

Before Inquiry Circles

1. *It is time to get into our inquiry circles. You will be with the same inquiry team as yesterday.*
2. *As we continue to explore outdoor organisms, we are practicing our roles as scientists. We do this because scientists have a special way in which they observe the world, read scientific texts, and write reports.*
3. *We have answered many of our Inquiry Chart questions. Remember, we use our Inquiry Chart to determine what questions still need to be answered. Today we will answer more questions or a different book, website, or eBook to add additional information to a question already answered.* (You may either remind your learners about the mini-lesson this morning or model it again using an additional resource or pointing out that one resource may answer multiple questions. If you have noticed learners not using a specific mini-lesson previously taught, you may model that reading strategy using the class pill bug Inquiry Chart.)
4. *Now, inquiry circle teams will work together on their Inquiry Chart.* (Be sure to display the class Inquiry Chart as a model.)

During Inquiry Circles (20 minutes)

1. *As you continue to look for information, do not forget that it is important to record your resources on the Inquiry Chart as you complete it.* (Remind learners that the class Inquiry Chart is visible as a guide. Also, you may choose to be more explicit for your class and only allow them to answer one question at a time daily. Use your judgement on the level of guidance.)

2. *Remember, we have anchor charts to help guide your thinking. Do not forget to use them while working. (Refer to the “Inquiry Toolbox” anchor chart and all of the mini-lesson anchor charts. Remind learners that we can use any of the reading strategies during inquiry circles.)*
3. *My role is to help guide the inquiry circles, but I expect you to work as a team to solve your problems together. (While teams are working together, walk around the room to facilitate as needed.)*

After Inquiry Circles (10 minutes)

1. *As we conclude our inquiry circles for today, each team will have a chance to share the questions they answered, as well as what they accomplished and what reading strategies they used. The Lab Director will lead the discussion about today’s results. Discuss what the team learned about its outdoor organism. Did team members monitor their reading comprehension? If the team came across a reading problem, which fix-up strategy did it use? What other problems did the team encounter? How did the team resolve those problems? (While teams are working together, walk around the room to facilitate as needed.)*
2. *The Data Scientist will now share with the entire class either something the team learned about their outdoor organism, a reading strategy, or how the team solved a problem. (Try to encourage teams to share a variety of different things. You do not want just facts about outdoor organisms, just mini-lesson reading strategies, or just cooperative learning strategies. If you saw a great example in action, encourage that team to share with the entire class.)*

Guided Science Investigation (30–45 minutes)

OVERVIEW

Children inspect images of different environments to identify and discuss the living and nonliving components in each natural place, or habitat, in which organisms live. They are also introduced to the concept of ecosystems.

GUIDING QUESTIONS

What are the living and nonliving components in an environment? What is an ecosystem?

BACKGROUND INFORMATION FOR THE TEACHER

Communities of organisms living in the same natural place at the same time form ecosystems in which they interact with each other and their nonliving environment. Ecosystems provide organisms what is needed for survival in all different kinds of environments on Earth.

In this lesson, each team will be given one environment image to explore and discuss the environment’s living and nonliving components. Afterward, all images will be posted for a gallery walk to give teams the opportunity to view and discuss all of the different environments.

Note: Children may question whether soil is living or not. The answer is that soil has both living and nonliving components and is constantly changed through the action of water, weather, and organisms. The nonliving parts of soil originated as rocks in the Earth’s crust. Over time, wind, water, intense heat or cold, and chemicals gradually break rocks into smaller pieces, a process known as weathering. The size and mineral composition of the tiny rock particles determine many of the properties of soil.

Most soils are enriched by decomposed plant and animal material. Soil is home to many kinds of organisms: bacteria, fungi, algae (plantlike organisms that live in water or moist environments), earthworms, insect larvae, and plant roots, to name a few. Soil also contains many tiny air spaces. Typical garden soil is 25% water, 45% minerals, 5% material from living organisms, and 25% air.

A hands-on lesson on soil composition suitable for this grade level is available on [BioEd Online](#).

SAFETY

Lab Directors should remind the learners to follow the rules for observing the pill bugs.

MATERIALS

Each team member needs:

- pencil
- “Pill Bug Investigation” journal

Each team needs:

- sticky notes
- 1 image of an environment

Teacher needs:

- copy of the “Environments” ppt
- chart paper with list of responses from previous day’s reading of “A Log’s Life”
- ability to project slides 1 and 2 of the “Environments” ppt

SETUP

Before the class:

- Preview the “Environments” PowerPoint.
- Make 1 color copy of each slide. Each team should be given a different environment image to study. Depending on the number of teams, the teacher may give each team 2 images.
- If color copies are not feasible, then the teacher may choose to either assign images on a tablet or digital device for each team.

DAILY OBSERVATIONS

- Remind children that this is Day 3 for making observations of their mini-habitats and recording data in their “Pill Bug Investigation” journals. **Observations can be made any time of the day as long as they are made daily.**

PROCEDURE

Engage

1. Remind the children about the story of the oak tree they read yesterday. *Let’s remember some of the things we learned about the organisms in the story.* Point to the chart paper with the list of responses you recorded in the last class.
2. Remind them that all the organisms in “A Log’s Life” were dependent on each other for different reasons and gave us good examples of interdependence. Ask, *Do you remember what **interdependence** means?* Point to the posted “**INTERDEPENDENCE**” placards. *Who can give me one example of interdependence from the story?* Accept all responses and discuss.

3. Explain that, in the story, many different organisms all lived in the same natural place, or environment: the forest. *The forest environment, like all environments, is made up of living and nonliving things.*
4. Tell learners, *The living things in the forest, like plants and animals, need food, water, air, and a space to live in and grow. The nonliving things in the environment do not have these needs because they do not live and grow.*
5. Explain, *When groups of living organisms interact with each other and their nonliving environment, we call that an **ecosystem**. Let's learn more about that!*

Explore

1. Project **slide #2** (pond). *Let's look closely at this picture of a pond. What are the living things in this picture? (Duck, plants, trees.) Could there be other living organisms that we can't see? (Fish, insects, animals in the trees, etc.)* Accept responses/offer prompts.
2. *What are the nonliving things in this picture? Accept responses/offer prompts. Is water alive? (No.) What other things do you see that are not alive? (Rocks.)*
3. Explain that the living things in the pond not only depend on each other but also on their nonliving environment for survival. The nonliving environment includes things like water, air, light, and temperature. Tell learners, *All these living and nonliving things together make up this pond ecosystem!*
4. *There are many types of environments and ecosystems in the world—let's explore some examples.* Distribute sticky notes and the color copies of the environment images.
5. Explain that each team will explore a different image (or 2) of an environment. Working as a team, they will identify the living and nonliving components. Instruct them to use the sticky notes to write down the living and nonliving things they find in the image(s).
6. Let them know that the pictures may not show all the organisms that live there. Ask, *Can you predict what other organisms might live in the environment that we can't see?*
7. Let them know they have 10 minutes for working. When time is up, post all images and notes for a gallery walk so they can share and discuss all of the different environments.

Explain

1. Gather the class and ask the Data Scientist from each team to share the team's findings. Allow time for discussion.
2. After the discussion, explain that it doesn't matter where in the world organisms live, their environment provides what they need for survival. Remind learners that when a community of different organisms live and interact with each other and their nonliving environment, we call that an **ecosystem**. Let the class know that they will be learning more about how ecosystems work in the next lesson.

Elaborate

1. Ask them to consider what they have learned about living and nonliving things in an environment as they continue to research their ecosystems in their inquiry circles.

Evaluate

1. Did learners communicate prior knowledge about living or nonliving things or ecosystems?
2. Did they accurately describe living and nonliving components?
3. Did they raise new questions about ecosystems?

Science Language

- Organisms have **needs** for surviving, such as water, energy, air, and a place to live.
- An **environment** is the natural place or surroundings where organisms live.
- An **ecosystem** is a community of organisms that live and interact with each other and their nonliving environment.

Expanded Standards

Reading TEKS

ELA.1.9F: recognize characteristics of multimodal and digital texts.

CCSS

RI.1.10: with prompting and support, read informational texts appropriately complex for grade 1.

RI.1.5: know and use various text features (e.g., headings, tables of contents, glossaries, electronic menus, icons) to locate key facts or information in a text.

NGSS

ESS-3.A: Living things need water, air, and resources from the land, and they live in places that have the things they need. Humans use natural resources for everything they do. **1-LS1-2:** Science & Engineering Practices: read grade appropriate texts and use media to obtain scientific information to determine patterns in the natural world.

Science TEKS

2018–19: 1.2D: Record and organize data using pictures, numbers, and words. **1.9B:** analyze and record examples of interdependence found in various situations such as terrariums and aquariums or pet and caregiver.

2024–25: 1.1E: Collect observations and measurements as evidence. **1.1F:** record and organize data using pictures, numbers, words, symbols, and simple graphs; **1.12B:** describe and record examples of interactions and dependence between living and nonliving components in terrariums or aquariums.