ALL for Science™
Authentic Literacy and Language for Science

Baylor College of Medicine
DEPARTMENT OF EDUCATION, INNOVATION & TECHNOLOGY
CENTER FOR EDUCATIONAL OUTREACH

Day 7: Why Do Living Things Need Each Other?

Mini-Lesson	Children learn how to use text features to locate information more quickly as they create an anchor chart with the teacher.
Inquiry Circles	Children answer more questions or add additional information to their inquiry charts from a different resource, such as a book, website, or eBook.
Guided Science Investigation	Children learn about interdependence as they listen to the story of a tree and its relationship to other organisms.

Literacy Strategy: practice using internal text features.	**Reading TEKS** ELA.1.9D.ii	**CCSS** RI.1.5
Science Concept: plants and animals need each other for survival.	**Science TEKS** **2018–19:** 1.2C, 1.2D, 1.9B, 1.9C **2024–25:** 1.1E, 1.1F, 1.12B, 1.12C	**NGSS** 1-LS1-1, 1-LS1-2

Science and Literacy Connection: scientists use the text features in reference materials while doing research because it is easier to find information, and sometimes, only specific parts of the text are needed to answer their question(s).

Mini-Lesson (15 minutes)

OVERVIEW

Scientists use the text features in reference materials while doing research. Like scientists, learners will most often only use parts of the text to answer their research question. Internal text features such as the table of contents, index, headings, bold-print words, and pictures can help learners locate information more quickly when reading. They may also use text features such as captions and graphs for additional information about a topic. This mini-lesson teaches children how to use text features found in exploratory texts.

Note: You are encouraged to create a "Using Internal Text Features" anchor chart with your learners as you move through the lesson, using the provided anchor chart as a model. Post it for easy reference when completed and remind learners to use the strategy during inquiry circles.

MATERIALS

Teacher needs:

- chart paper
- marker(s)
- class Inquiry Chart about pill bugs
- "Using Internal Text Features" anchor chart as model
- exploratory text about pill bugs to model the strategy

PROCEDURE

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

EXPLAIN THE STRATEGY

Tell what the strategy is (declarative knowledge)

1. *Our strategy today is called "using text features." Text features are the table of contents, index, headings, and bold words, etc. Yesterday we noticed that many text features we can find in a book like headings and graphics are also on websites.*

Tell when and why to use the strategy (conditional knowledge)

1. *I use text features when I am searching for specific information in many texts and websites. I will do this so I can locate specific information quickly when I don't want to read all of the text.*

Tell how to use the strategy (procedural knowledge)

1. (Model the strategy using a book about pill bugs. Be sure to choose a text with many examples of text features). *The first thing I will do is scan my eyes over the table of contents to see which page may have the information I am looking for about my topic.* (It is suggested that you model looking at the class Inquiry Chart about pill bugs to find missing information and then scan the table of contents for that information.)
2. *Now, if the table of contents does not help me, I can think of keywords and look in the index. I must remember that the index is found in the back of the book and is in alphabetical order like a dictionary. I will scan for the word I am looking for and then find all the pages that have that word. Once I know what page I need, I will use text features like bold words, colored words, headings, and captions to determine where I need to start reading.* (Model for your learners using these features to locate information needed for the class Inquiry Chart. Be sure to record the information and the resource on the chart.)

Science Inquiry Circles (30 minutes)

OVERVIEW

Today, work continues in the inquiry circles to investigate different questions, or to add more information about outdoor organisms. The teacher should encourage learners to use internal text features as discussed in today's mini-lesson.

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:

- all mini-lesson anchor charts used to date
- exploratory texts 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 team as yesterday.* (You may assign new team roles at your discretion and have the Equipment Directors gather the Inquiry Chart for their team.)
2. *We have already answered many of our class Inquiry Chart questions. Today, we will answer more questions or use a different book, website, or eBook to add to a question we've already answered.* (You may either remind your learners about the mini-lesson this morning, model it again using an additional resource, or point out that one resource may answer multiple questions. To incorporate the mini-lesson from today, explicitly remind learners how text features help them to locate and learn additional information.)
3. *Now, inquiry circles will work together on their Inquiry Chart.* (Be sure to display the class Inquiry Chart as a model.)

During Inquiry Circles (20 minutes)

1. *Today, as you continue to look for information, do not forget that it is important to record your resources on your Inquiry Chart as you complete it.* (Remind children 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. (At this point, teams might have information under multiple questions and from multiple sources. You many need to remind teams that information in the same **row** is from the same source and information in the same **column** pertains to the same question. One source might answer multiple questions.)
3. *Remember, we have anchor charts to help guide your thinking. Do not forget to use them while in teams.* (Refer to the "Inquiry Toolbox" anchor chart and all of the mini-lesson anchor charts. Remind learners that we can use any of our reading strategies during inquiry circles, not just the strategy discussed in the mini-lesson for today.)
4. *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.*
2. *The Lab Director will lead the discussion about today's results. Discuss what the team learned about its outdoor organism. Which text features did the team find in its texts? How did these text features help the team? 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.)
3. *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 children to share a variety of 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
As they listen to the story "A Log's Life," learners discover how plants and animals depend on each other for survival.

GUIDING QUESTIONS
Why do living things need each other? What is interdependence?

BACKGROUND INFORMATION FOR THE TEACHER
Learners have prior knowledge about the needs of living things. Here, they are introduced to the concept of interdependence by associating the term with the idea that plants and animals need each other for survival. Using the context of the story about a tree, they learn about the complex relationships between organisms.

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

OBSERVATIONS
Remind learners that this is Day 2 for making observations of their mini-habitats and recording data in their science notebooks. **Observations can be made any time of the day as long as they are made daily.**

MATERIALS
Each team member needs:
- pencil
- "Pill Bug Investigation" journal

Teacher needs:
- chart paper

- marker(s)
- INTER and DEPENDENCE placards
- YouTube video of "A Log's Life" story by Wendy Pfeffer

SETUP

Before the class:

- Label a sheet of chart paper **"Examples of Interdependence."**

PROCEDURE

Engage

1. Gather the learners and announce that you have another big word to introduce today!
2. Explain that this word has two parts. Hold up the placard with **"INTER."** Tell them that "inter" means "between." Next, hold up the placard with **"DEPENDENCE."** Tell them that "dependence" means that something or someone relies or depends on something or someone else.
3. Put the placards together and you have the word **"INTERDEPEDENCE"**—a connection or relationship between things that rely on each other.
4. Tell them that today we will explore how plants and animals **depend on and need each other to survive.**
5. Post the **INTERDEPENDENCE** placards where learners can refer to them later.

Explore

1. Tell the class that you have a story to share with them: "A Log's Life."
2. Ask them to listen carefully as you read (or project the audio book) so that you can discuss it afterward.

Explain

1. After the story, ask, *Who can name some of the organisms in the story?* Accept all responses, recording them on chart paper labeled **"Examples of Interdependence."** The teacher may clarify any misconceptions by reading passages from the text or showing illustrations in the book during the discussion.
2. Ask, *Are we researching some of these organisms? Which ones?* Checkmark learners' responses on the chart paper.
3. Remind the children that organisms are living things. Ask*, Is the oak tree in the story an organism too? What kind of organism is it?* (A plant.)
4. Ask, *Who can tell me how the oak tree provided what the other living things in the story needed?* (E.g., habitat, food for others.) Write their responses on chart paper. Most will readily offer that the tree provided a place to live or that its leaves/acorns provided food.
5. Prompt them to consider, *How did the other organisms in the story provide food for each other?* For example, *What did the woodpecker eat? What did the millipede eat?* Remind them that living things need the energy that comes from food and that this energy is transferred from one organism to another through food chains, which they will explore soon.
6. Next ask, *What happened to the tree in the storm?*
7. Ask, *What happened when the tree became rotten?* Refer back to the pages in the book. (Animals moved out; the tree broke down and eventually became soil through the action of living things/decomposers.)
8. Ask, *How did a tree begin to grow again?* (When the decomposed tree was broken down and became soil, it provided just what the acorn needed to grow another tree!)

9. Explain, *This story describes how the interdependence between all of these living things allowed them to survive!*

Elaborate

1. To extend the discussion, ask the class, *Who has a pet at home?*
2. Tell them that regardless of what kind of pet they have, all pets have needs that they, the owners, provide for them. Ask for ideas about what those needs are (food, a place to be, water, air; some may also include medicine and grooming). Accept all responses.
3. Then ask, *Can your pet do any of this for him- or herself?* Listen to their ideas.
4. Explain that pets **depend** on their caregivers to provide for them. They are **dependent** on us so that they can survive.
5. Ask, *Do we depend on our pets to survive?* (Do they feed us? Clean up for us? etc.) Some may say that they guard or protect us or give us companionship and love. Explain that while those are very important to us, they are not necessary for us to survive. (What do people without pets do?)
6. Remind them that **interdependence means depending on and needing each other for survival**.
7. Let them know that tomorrow they will look at more examples of how organisms depend on and need each other to survive in an **ecosystem**.

Evaluate

1. Did learners offer reasonable explanations for why living things need each other?
2. Did they communicate an essential understanding of "interdependence"?
3. Are they using scientific language in their communications?

Science Language

- **Interdependence** means depending on and needing each other for survival.
- A **food chain** describes the sequence of who eats whom that transfers energy between organisms.
- A **habitat** is a place where organisms live and grow.

Expanded Standards

Reading TEKS

ELA.1.9D: recognize characteristics and structures of informational texts, including (ii) features or simple graphics to locate or gain information.

CCSS

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

1-LS1-1: Disciplinary Core Ideas: All organisms have external parts. Different animals use their body parts in different ways to see, hear, grasp objects, protect themselves, move from place to place, and seek, find, and take in food, water, and air. Plants also have different parts (roots, stems, leaves, flowers, fruits) that help them survive and grow. Animals have body parts that capture and convey different kinds of information needed for growth and survival. Animals respond to these inputs with behaviors that help them survive. Plants also respond to some external inputs. **1-LS-1-2:** 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: 1.2C: collect data and make observations using simple equipment such as hand lenses, primary balances, and non-standard measurement tools. **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. **1.9C:** gather evidence of interdependence among living organisms such as energy transfer through food chains and animals using plants for shelter.

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; **1.12C:** identify and illustrate how living organisms depend on each other through food chains.