Lesson 1.1
Pre-Unit Assessment
Students' Initial Diagrams

Students are introduced to the *Plant and Animal Relationships* unit and to their role as plant scientists investigating changes in the trees at a Bengal Tiger Reserve in India. To initiate student thinking about habitats, the teacher introduces and demonstrates how to use the unit’s reference book, *Handbook of Habitats*. Pairs explore the book and read an introductory section about diversity within and across different types of habitats. Next, students show their initial ideas by adding to a diagram of a habitat. They identify the parts of a plant, which seeds in the habitat are most likely to grow, and how seeds can move from one place to another. Students’ diagrams serve as the pre-unit assessment for formative purposes, designed to reveal students’ initial understanding of unit content, both unit-specific science concepts and the crosscutting concept of Systems and System Models, prior to instruction. Students’ responses offer a baseline from which to measure growth of understanding over the course of the unit and can also provide the teacher with insight into students’ thinking. This three-dimensional assessment will allow the teacher to draw connections to students’ experiences and to watch for preconceptions that might get in the way of students’ understanding. The purpose of this lesson is to provide students with an overview of the unit to motivate their learning about Earth’s habitats and to offer students an opportunity to express their initial ideas about unit content.

**Predicted phenomenon:** Seeds growing in a particular place.

**Students learn:**

- There are many different habitats on Earth.
- Plant scientists study plants and also other living things in a habitat.
- Reflecting on what you understand and don’t understand allows you to prepare to learn new things.
Introducing the Reference Book

The teacher introduces the reference book. Partners read together to explore some of the different habitats on Earth.

Instructional Guide

1. **Hold up Handbook of Habitats.** Explain that one important thing scientists do before they begin investigating is reading information that other scientists have gathered about the topic they will be studying.

   This is a reference book. The purpose of a reference book is to provide a lot of information about a topic. Instead of reading a reference book from beginning to end, you can read specific parts of the book to gather information about something you are investigating.

   Read the title aloud and invite students to share their observations of the images on the front cover.

   This book has information about different habitats around the world. We will use this book throughout our work as plant scientists to gather information. We’ll use it today to start thinking about living things and the places where they live.

2. **Assign student partners and distribute one book to each pair.** Give students a few minutes to explore the text.

3. **Direct students to turn to the contents page (page 3).**

   The Table of Contents lists the important sections of the book. It tells us on what pages we can find information we are looking for.

   Point out the “Different Habitats” section on page 4 that is listed at the top of the contents page.

   Let’s take a closer look at the “Different Habitats” section to see if we can find out more about habitats.
4. **Have students turn to pages 4–5.** Ask them to look carefully at the photographs of habitats and discuss what they notice about the habitats with their partners. Have a few volunteers share ideas. Accept all responses.

5. **Define habitat.** Display the habitat vocabulary card.

A *habitat* is the place where an animal or plant lives and gets what it needs to grow and survive. The broadleaf forest is one example of a habitat. There are many different habitats on Earth, such as the ones you see on pages 4–5 in this book.

Post the habitat vocabulary card on the classroom wall.

6. **Have student pairs read pages 4–5, then browse the rest of the book.** Encourage students to share their observations of and questions about different habitats with their partners as they read.

7. **Have students share observations and questions.** Invite students to share what they noticed about different habitats on Earth while browsing the book.

8. **Collect books.** Let students know that they will continue to use this book throughout the unit in their work as plant scientists.

9. **Introduce the Unit Question.** Explain to students that throughout this unit, they will be learning about living things and their habitats. As they investigate the Bengal Tiger Reserve to help figure out what is happening with the trees, they will learn about how the living things in the Reserve depend on one another.

Point to the Unit Question on the wall.

Throughout the unit, we’ll be trying to answer the question, *How do the living things in a habitat depend on each other?*

**Teacher Support**

**Background**

**About the Book: Handbook of Habitats**

*Handbook of Habitats* is the reference book for this unit and provides information about a series of diverse habitats on Earth. After an introduction to habitats as places where living things depend on one another and get what they need, the book outlines the fundamentals of plant growth that take place within any habitat. The remainder of the book is devoted to a detailed look at six habitats around the world: the Amazon rain forest, a broadleaf forest, the Everglades wetlands, the Serengeti Plains, the Sonoran Desert, and a city park. The plants and animals that live in each habitat are described in detail, and the interdependent relationships between these organisms are highlighted. The reference book supports students’ understanding of the unique plants and animals that live in each habitat and of how relationships among these living things support the process of dispersing seeds to places where they can grow into new plants. It also gives students a sense of the diversity of habitats on Earth.
Background

Literacy Note: About Reference Books
Reference books provide in-depth information about specific topics and are typically read for particular purposes. For this reason, students do not read every section in reference books, nor do they read reference books from beginning to end. Rather, they search for the information they need and then read the relevant sections carefully. In this lesson, students read the first few pages of the introduction, and browse through the book to get ideas of what some habitats on Earth are like. Students will return to the book multiple times throughout the unit to search for information. Reading reference materials in this way is authentic to how scientists use reference materials, and it encourages students to read complex text both purposefully and carefully.

Instructional Suggestion

Providing More Experience: Characteristics of Reference Books
Gather a variety of reference books and ask students to work in small groups to look through the books and make observations about how they are organized, what kinds of information they contain, and what text features are present. Make a class chart of these characteristics and reflect on the usefulness of the various reference materials in particular situations.

Instructional Suggestion

Classroom Management: Helping Students Work Effectively in Pairs
Throughout the unit, there will be many opportunities for students to work in pairs. It is well worth the time to discuss your expectations for partner work with the class beforehand. Guidelines you may wish to cover include procedures for sharing ideas, managing shared materials, listening to each other, and overall cooperation. Discuss your expectations explicitly and specifically with regard to conversations staying focused on the schoolwork at hand. You may invite a pair of students to model effective partner work in front of the class.
Introducing the Reference Book

The teacher introduces the reference book. Partners read together to explore some of the different habitats on Earth.

Instructional Guide

1. **Hold up Handbook of Habitats.** Explain that one important thing scientists do before they begin investigating is reading information that other scientists have gathered about the topic they will be studying.

   Este es un libro de referencia. El propósito de un libro de referencia es proporcionar mucha información sobre un tema. En vez de leer el libro desde el principio hasta el final, pueden leer partes específicas del libro para reunir información sobre algo que están investigando.

   Read the title aloud and invite students to share their observations of the images on the front cover.

   Este libro tiene información sobre diferentes hábitats alrededor del mundo. Usaremos este libro a lo largo de nuestro trabajo como científicos y científicas de plantas para reunir información. Lo usaremos hoy para comenzar a pensar en los seres vivientes y los lugares donde viven.

2. **Assign student partners and distribute one book to each pair.** Give students a few minutes to explore the text.

   2. Dir. Direct students to turn to the contents page (page 3).

   El Contenido enumera las secciones importantes del libro. Nos dice en qué páginas podemos encontrar información que estamos buscando.

   Point out the “Different Habitats” section on page 4 that is listed at the top of the contents page.

   Miremos más de cerca la sección "Diferentes hábitats" para ver si podemos averiguar más sobre los hábitats.
4. Have students turn to pages 4–5. Ask them to look carefully at the photographs of habitats and discuss what they notice about the habitats with their partners. Have a few volunteers share ideas. Accept all responses.

5. Define habitat. Display the habitat vocabulary card.

6. Have student pairs read pages 4–5, then browse the rest of the book. Encourage students to share their observations of and questions about different habitats with their partners as they read.

7. Have students share observations and questions. Invite students to share what they noticed about different habitats on Earth while browsing the book.

8. Collect books. Let students know that they will continue to use this book throughout the unit in their work as plant scientists.

9. Introduce the Unit Question. Explain to students that throughout this unit, they will be learning about living things and their habitats. As they investigate the Bengal Tiger Reserve to help figure out what is happening with the trees, they will learn about how the living things in the Reserve depend on one another.

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