

# Practice B Teacher Instructions

## In the Field: Billie the Birdwatcher

**Objective:** Each student will be able to identify habitats based on their biotic and abiotic components in healthy ecosystems.

- “I can identify how different bird species rely on their environment to survive.”
- Students actively read and reflect as field scientists, support a field investigation with Billie the Birdwatcher, and identify appropriate habitats for three North American bird species.
- Academic Terms: basic needs including habitat, shelter (space), food, water.

## What Is Happening?

*Digital Student Journal Slides 3-4*

**Description:** Phenomenon-based approach for any classroom setting. This attention-getter can be used as either a cooperative learning strategy for engagement or as an individual reading opportunity to activate prior knowledge.

There is no correct or uniform answer for these connections. However, students should be able to relate information from 3rd, 4th, and possibly 5th grade to these terms using examples they have either directly observed or learned about previously. Be sure to provide time for students to make observations about the image before moving on to the description on previous slides. Encourage full sentences in the written descriptions.

## In the Field: Billie the Birdwatcher Introduction

*Digital Student Journal Slide 5*

**Description:** Students help Billie with a descriptive field investigation on bird habitats most commonly found in eastern Texas. Students read field journal entries on various birds and identify where each bird lives, its shelter, and characteristics of their habitat to help answer the research question, “How do different birds live in different habitats?”

### Scientific & Engineering Practices Spotlight

5.4B Research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a science, technology, engineering, and mathematics (STEM) field to investigate STEM careers.

- Students see how Billie’s practice is similar to that of an ornithologist or terrestrial ecologist.

## In the Field: Instructions

*Digital Student Journal Slide 6*

**Description:** Students are introduced to the featured character and also read their activity instructions.

## In the Field: Observing

*Digital Student Journal Slides 7-9*

**Description:** Students read a passage about the American Robin, a Great Blue Heron, and an Eastern Meadowlark. They use information on each species to complete an ID Card for each bird, respectively.

If students struggle to identify basic needs, remind them that in Practice A it was determined that all organisms required both biotic and abiotic factors to survive in a healthy ecosystem. Students should identify the biotic and abiotic factors noted in the journal entries.

### Slide 7 American Robin, Answer Key

- WHERE IT LIVES: in a tree in our backyard
- SHELTER/NEST: bowl-shaped nest
- FOOD and/or WATER: worms and insects, small ponds, birdbath

### Slide 8 Great Blue Heron, Answer Key

- WHERE IT LIVES: trees in marshy areas
- SHELTER/NEST: platform-style nests
- FOOD and/or WATER: fish

### Slide 9 Eastern Meadowlark, Answer Key

- WHERE IT LIVES: native grasslands, prairies, pastures, agricultural fields, open areas
- SHELTER/NEST: small depressions in the ground, constructs a cup nest
- FOOD and/or WATER: insects, including crickets, grasshoppers, caterpillars, and grubs. Seeds and wild fruits

## ELPS Spotlight

STRATEGY: Collaborative Learning

**Group Presentation: Students will work in pairs or small groups to observe and document facts about a bird, and use the describing words to classify the bird's habitat, shelter, and food in a multimedia presentation.**

Materials:

- Field journals for each student
- Pictures of American Robin, Great Blue Heron, and Eastern Meadowlark
- Multimedia presentation tools (e.g. PowerPoint, Google Slides)

Instructions:

1. Divide students into small groups and assign each group one of the three birds: American Robin, Great Blue Heron, or Eastern Meadowlark.
2. Each group will read about their bird and use the describing words in the text to search for images and/or videos and develop a multimedia presentation to teach the class about their bird. **(Reading)**
3. As each group presents, the class will record field observations in their field journal and classify information by the bird's habitat, shelter, and food. **(Listening and Writing)**
4. After all groups have presented, lead a class discussion on how the different birds' habitats, shelters, and foods vary and classify the descriptors observed. **(Speaking)**

Sentence starters to help students classify information:

- *The habitat of the [bird name] is...*
- *The shelter of the [bird name] includes...*
- *The food of the [bird name] consists of...*
- *I noticed that the [bird name] tends to live in/with/eat...*
- *Based on our observations, we can classify the [bird name] as a bird that lives in/with/eats...*

Note: Encourage students to use the vocabulary and describing words from the text and images to classify the birds' habitats, shelters, and foods.

### ELPS Tips for Beginning EB students:

- **Simplify Language:** Use simple language and avoid complex sentence structures when communicating with Beginning EBs. This can help them understand instructions and concepts more easily.
- **Use Visual Aids:** Use pictures to help Beginning EBs understand the characteristics of each bird's habitat, shelter, and food.
- **Provide Vocabulary Support:** Provide visual vocabulary support through labeled pictures or word walls to help Beginning EBs learn and retain new words.
- **Provide Sentence Frames:** Provide sentence frames for students to complete when discussing the bird's habitat, shelter, and food (e.g. "The [bird name] lives in \_\_\_\_\_.").

### ELPS Tips for Intermediate and Advanced EB students:

- Use Multimodal Approaches: Use a variety of approaches to teaching, such as visual, auditory, and kinesthetic activities. This can help Intermediate EBss learn through different modes of communication and processing.
- Provide Scaffolding: Provide scaffolding through sentence starters or prompts to help Intermediate EBs develop their ideas and express themselves more clearly.
- Encourage Collaboration: Encourage Intermediate EBss to work in groups and pairs with fluent English speakers. This can help them practice their language skills and build confidence in speaking English.

## Pulling It Together

*Digital Student Journal Slides 10-13*

**Description:** Students answer a variety of the new STAAR® question types. The part of this section involves a sorting activity relative to terms based on abiotic or biotic needs.

Encourage students to use the bird ID cards to complete the Pulling It Together slides.

### Slide 10, Answer Key

1. “with their bill into the plant cover”

### Slide 11, Answer Key

2. Red-winged Blackbird.

### Slide 12, Answer Key

3. Tree, birdbath.

### Slide 13, Answer Key

4. Pictured below.

HABITAT	Backyard		Marshy Area		Meadow	
BIRD SPECIES	American Robin		Great Blue Heron		Eastern Meadowlark	
BASIC NEEDS	Biotic	Abiotic	Biotic	Abiotic	Biotic	Abiotic
	worm tree	birdbath	fish frog	pond	grasshopper grub	ground fence post

## In the Field: Reflection

*Digital Student Journal Slide 14*

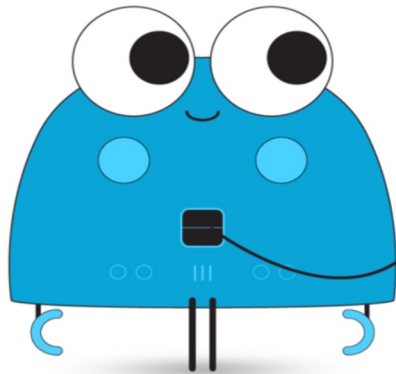
**Description:** Students reflect on the work they have done so far to make inferences based on their knowledge.

Encourage students to refer back to the previous Pulling it Together table when constructing their response.

### **Answer Key**

Organisms must interact with biotic and abiotic factors to survive. Different birds need different biotic and abiotic factors in order to survive. The American Robin lives in backyards and basic biotic needs are worms and trees. Their abiotic needs are water in a birdbath. The Great Blue Heron lives in marshy areas and basic biotic needs are fish and frogs. Their abiotic needs are ponds. The Eastern Meadowlark can be found in meadows and basic biotic needs are grasshoppers and grub. Their abiotic needs are fence posts and the ground.

Student reflections will vary, but should generally focus on the patterns involved with studying how living things rely on abiotic factors in their environment to survive.



# TREKs™

## 5.12A Interdependence

### Practice B

Slide 1

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## TREK Goals

### 5.12A: Interdependence

Observe and describe how a variety of organisms survive by interacting with biotic and abiotic factors in a healthy ecosystem.

## Practice B

In the Field:  
Billie  
the Birdwatcher

I can identify  
how different  
bird species rely on  
their environments  
to survive.



Slide 2

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Image Credit: Unsplash / Matthew Schwartz

## What Is Happening?

**Instructions:** Describe what you think is happening in this picture. What do you see? What does it make you think of? What does this make you wonder?

WRITE HERE

Submit

Slide 3

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Image Credit: Unsplash / Matthew Schwartz

## What Is Happening?

### Sometimes food is hard to swallow!

This bird, a Double-crested Cormorant, hunted down a huge fish for its meal. The photographer reported that it took the bird nearly 20 minutes to finally swallow it whole.

While some birds eat seeds and insects, others eat fish, crayfish, clams, and other larger animals. What a bird eats is most often found where it lives. Such a habitat best meets not only a species' food needs, but also their needs for shelter, water, and good places to raise their young.

Slide 3

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PRACTICE B

# In the Field: Billie the Birdwatcher



Image Credit: Unsplash / li Shanting

Hi, my name is Billie. My favorite hobby is watching birds. There are so many different kinds of birds! It's so cool how all birds live and how they act differently from each other.

I not only watch birds, but I also photograph them in the field. I record my observations and field notes in a Field Journal. I need help making a bird identification guide based on my research and field notes.

You're going to be my ornithology research assistant to help me create a bird field guide!

**Help me answer, "How do different birds live in different habitats?"**

Slide 5

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PRACTICE B




# In the Field: Instructions



Billie took a field trip to the Houston Audubon's Bolivar Flats Shorebird Sanctuary to conduct a field investigation on common bird species at four different locations. The sanctuary's trail goes through a few different kinds of healthy ecosystems. She recorded her observations and data on identification cards. Help Billie create an ID Card for each bird and answer the question, "How do different birds live in different habitats?"

**Instructions to complete the Field Guide:**

1. Read each Journal or Research entry card.
2. On the right side of each slide, complete the card by writing in your responses to identify each bird's interactions with biotic and abiotic factors as observed by Billie:
  - where it lives,
  - how it shelters/nests, and
  - characteristics about its food and/or water.

<p><b>ID Card #1</b></p>  <p>American Robin (<i>Turdus migratorius</i>)</p>	<p><b>ID Card #2</b></p>  <p>Great Blue Heron (<i>Ardea herodias</i>)</p>	<p><b>ID Card #3</b></p>  <p>Eastern Meadowlark (<i>Sturnella magna</i>)</p>
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Slide 6

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**PRACTICE B**

# In the Field: Observing



**Instructions:** Read the passage, then write in the description into its matching basic needs category in the ID Card.



### Field Journal Entry: American Robin

I have been following the lives of a robin family that has a home **in a tree in our backyard**. Earlier this spring, the pair of adults built their nest on a **tree shelf**, where some large branches come together. The other branches **above** the nest seem to shelter the spot from heavy rains and predators, like hawks.

This shelter isn't enough to protect from cold. The parents made the nest by bringing small sticks and grass to the site in trips. They used the materials to create their **bowl-shaped nest**. Since then, four eggs hatched in the nest! When the chicks are hungry, they all chirp loudly. I've seen parents feed them different kinds of **worms and insects**.

The robins probably get water from the food they eat and from **small pools** after it rains. My mom also makes sure our **birdbath** is full of clean, fresh water. I have seen the robin bathe and drink from it.

<b>ID Card #1</b>
<b>WHERE IT LIVES</b>
WRITE HERE
<input checked="" type="checkbox"/> Submit
<b>SHELTER/NEST</b>
WRITE HERE
<input checked="" type="checkbox"/> Submit
<b>FOOD and/or WATER</b>
WRITE HERE
<input checked="" type="checkbox"/> Submit

Slide 7

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**PRACTICE B**

# In the Field: Observing



**Instructions:** Read the passage, then write the description into its matching basic needs category in the ID Card.



### Journal Entry: Great Blue Heron

The forest yields to a marshy area and a small pond with floating lily pads, along with the other aquatic plants and grasses. On the other side, I see a Great Blue Heron.

He is wading in the shallow water near some cattails. Maybe he is hunting. Looking for frogs? Bugs? He is stalking slowly, while his eyes survey the water. Suddenly, he thrusts his long neck downward. His beak sharply cutting into the water. He got it! He gulps down a small fish.

Another heron is nearby standing in a tree, on a large branch. Next to it is a platform-style nest, made mostly of sticks. It's about 2-3 meters across and a half meter deep. I can see some small bird beaks pointed up into the air. The hunter launches out of the water and up to his family. Back at the nest, he leans his head, passing food from his mouth into the mouth of each chick until he is unloaded his cargo. The chicks quiet down.

<b>ID Card #2</b>
<b>WHERE IT LIVES</b>
WRITE HERE
<input checked="" type="checkbox"/> Submit
<b>SHELTER/NEST</b>
WRITE HERE
<input checked="" type="checkbox"/> Submit
<b>FOOD and/or WATER</b>
WRITE HERE
<input checked="" type="checkbox"/> Submit

Slide 8

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PRACTICE B

# In the Field: Researching



**Instructions:** Read the passage, then write the description into its matching basic needs category in the ID Card.



### Research Entry: Eastern Meadowlark

A rain storm quickly cut short my field trip, and I returned home before scouting out a meadow. So, to learn more about the Eastern Meadowlark I would have observed in

the field, I did some research at Cornell University's AllAboutBirds.org website. Here is a summary of what I found:

These birds are most common in grasslands, prairies, and other grassy areas. They can often be found singing on fence posts and telephone lines.

They get their food by walking on the ground and probing with their bill into the plant cover. They eat mostly insects, including crickets, grasshoppers, caterpillars, and grubs. During winter they also eat seeds and wild fruits.

The female finds a small depression on the ground - typically well-hidden by dense vegetation - and builds the nest over 4-8 days. She constructs a cup nest generally woven with dead grasses, plant stems, and strips of bark.

<b>ID Card #3</b>
<b>WHERE IT LIVES</b>
WRITE HERE
<input type="button" value="Submit"/>
<b>SHELTER/NEST</b>
WRITE HERE
<input type="button" value="Submit"/>
<b>FOOD and/or WATER</b>
WRITE HERE
<input type="button" value="Submit"/>

Slide 9

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PRACTICE B

# Pulling It Together



1. Read the excerpt from the the Eastern Meadowlark card. Which words in this paragraph help the reader understand what probing means?

Select the correct answer.



“They get their food by walking on the ground and probing with their bill into the plant cover.

They eat mostly insects, including crickets, grasshoppers, caterpillars, and grubs. During winter they also eat seeds and wild fruits.”

Slide 10

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PRACTICE B

# Pulling It Together



2. Read the question carefully. Then, enter your answer in the box provided.

### Great Horned Owl



Nests in large holes called cavities in big trees, such as pine trees.

### Red-winged Blackbird



Makes platform nests using coarse, wet plant material woven around large stems, like cattails.

In the Field Journal, Billie recorded observations for the Great Blue Heron. Compare and contrast the heron's nesting description with those of the four other birds provided here.

Which bird is *most likely* going to nest near the Great Blue Heron? Support your answer with evidence from the descriptions.

WRITE HERE

### Ruby-throated Hummingbird



Builds nests about 3-12 meters above the ground on a slender tree branch, like oak or poplar.

### Greater Roadrunner



Nests about 3-10 meters above the ground on a horizontal branch or in the crotch of a sturdy bush, cactus, or small tree.

Submit

Slide 11

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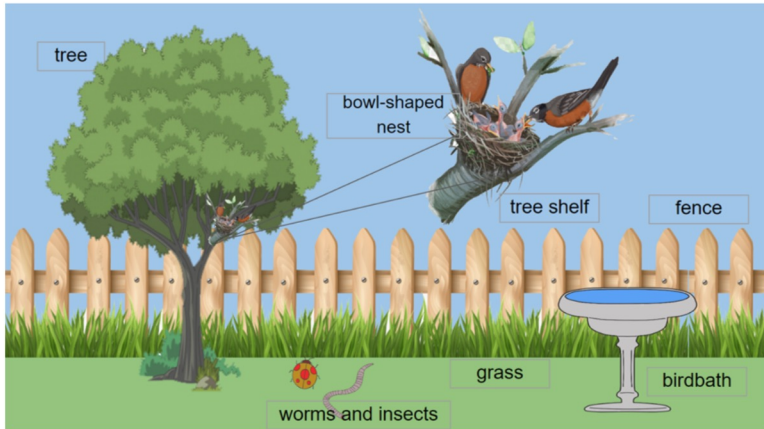
PRACTICE B

# Pulling It Together



3. Observe the bird's interactions with biotic and abiotic factors in the image below. Which represent the basic needs of food and water for the bird?

Select **TWO** correct answers.



Submit

Slide 12

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**PRACTICE B**

# Pulling It Together



4. Move and sort the basic needs of different birds based on their habitat in a healthy ecosystem. Use all of the biotic and abiotic things listed in the Term Bank below.

HABITAT	Backyard		Marshy Area		Meadow	
BIRD SPECIES	American Robin		Great Blue Heron		Eastern Meadowlark	
BASIC NEEDS	Biotic	Abiotic	Biotic	Abiotic	Biotic	Abiotic

TERM BANK
<div style="display: flex; justify-content: space-between; padding: 5px;"> <div style="border: 1px solid gray; padding: 2px 5px;">fence post</div> <div style="border: 1px solid gray; padding: 2px 5px;">birdbath</div> <div style="border: 1px solid gray; padding: 2px 5px;">ground</div> <div style="border: 1px solid gray; padding: 2px 5px;">pond</div> <div style="border: 1px solid gray; padding: 2px 5px;">tree branch</div> </div> <div style="display: flex; justify-content: space-between; padding: 5px; margin-top: 5px;"> <div style="border: 1px solid gray; padding: 2px 5px;">fish</div> <div style="border: 1px solid gray; padding: 2px 5px;">grasshopper</div> <div style="border: 1px solid gray; padding: 2px 5px;">insect</div> <div style="border: 1px solid gray; padding: 2px 5px;">worm</div> <div style="border: 1px solid gray; padding: 2px 5px;">frog</div> <div style="border: 1px solid gray; padding: 2px 5px;">grub</div> </div>

Submit

Slide 13

**PRACTICE B**

# In the Field: Reflection



**Instructions:** Reflect on Billie's questions below, and write your response in the box.



Image Credit: Unsplash / li Shanting

Thanks for helping me complete my bird ID Cards! We found several patterns relative to how each bird interacts with biotic and abiotic things in its habitat. What did you learn about our research on how different birds live in different habitats?

WRITE HERE

Submit

Slide 14