

## **Plant and Animal Relationships:**

Investigating Systems in a Bengali Forest



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*Plant and Animal Relationships: Investigating Systems in a Bengali Forest*

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# Safety Guidelines for Science Investigations

- 1. Follow instructions.** Listen carefully to your teacher's instructions. Ask questions if you don't know what to do.
- 2. Don't taste things.** No tasting anything or putting it near your mouth unless your teacher says it is safe to do so.
- 3. Smell substances like a chemist.** When you smell a substance, don't put your nose near it. Instead, gently move the air from above the substance to your nose. This is how chemists smell substances.
- 4. Protect your eyes.** Wear safety goggles if something wet could splash into your eyes, if powder or dust might get in your eyes, or if something sharp could fly into your eyes.
- 5. Protect your hands.** Wear gloves if you are working with materials or chemicals that could irritate your skin.
- 6. Keep your hands away from your face.** Do not touch your face, mouth, ears, eyes, or nose while working with chemicals, plants, or animals.
- 7. Tell your teacher if you have allergies.** This will keep you safe and comfortable during science class.
- 8. Be calm and careful.** Move carefully and slowly around the classroom. Save your outdoor behavior for recess.
- 9. Report all spills, accidents, and injuries to your teacher.** Tell your teacher if something spills, if there is an accident, or if someone gets injured.
- 10. Avoid anything that could cause a burn.** Allow your teacher to work with hot water or hot equipment.
- 11. Wash your hands after class.** Make sure to wash your hands thoroughly with soap and water after handling plants, animals, or science materials.

## **What Is a Scientific Explanation?**

1. It answers a question.
2. It is based on science ideas you have learned.
3. It uses science words.
4. It is shared with someone.



Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Getting Ready to Read: *My Nature Notebook*

Directions:

1. Before reading *My Nature Notebook*, read the sentences below.
2. If you agree with the sentence, write an “A” on the line before the sentence.
3. If you disagree with the sentence, write a “D” on the line before the sentence.
4. After you read the book, see if your ideas have changed. Be ready to explain your thinking.

\_\_\_\_\_ You can study one small spot in a habitat for a long time.

\_\_\_\_\_ Things in a habitat never change.

\_\_\_\_\_ There are many different ways to study a habitat.

\_\_\_\_\_ Plants and animals can't live in the same habitat.

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Ways to Study a Habitat

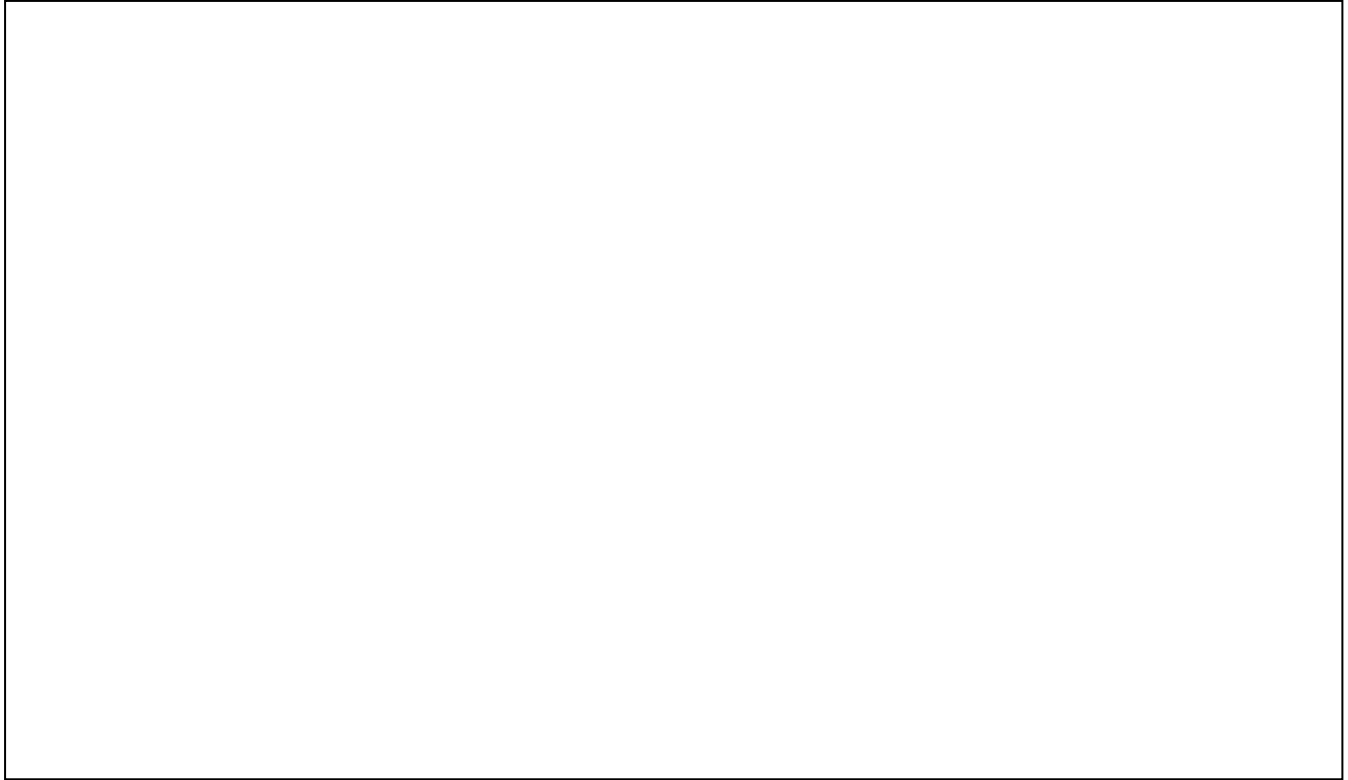
Directions:

1. After reading *My Nature Notebook*, think about the ways the child studied the forest habitat.
2. In each box below, write one way she studied the forest habitat.


Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Reading Reflection: *My Nature Notebook*

Look at the picture of the spot on the last page of *My Nature Notebook*. What do you think the spot will look like in six months? Draw what you think you might see.



Write about your drawing.

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Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Daily Written Reflection

Do you think your school is located in a broadleaf forest? Why or why not?

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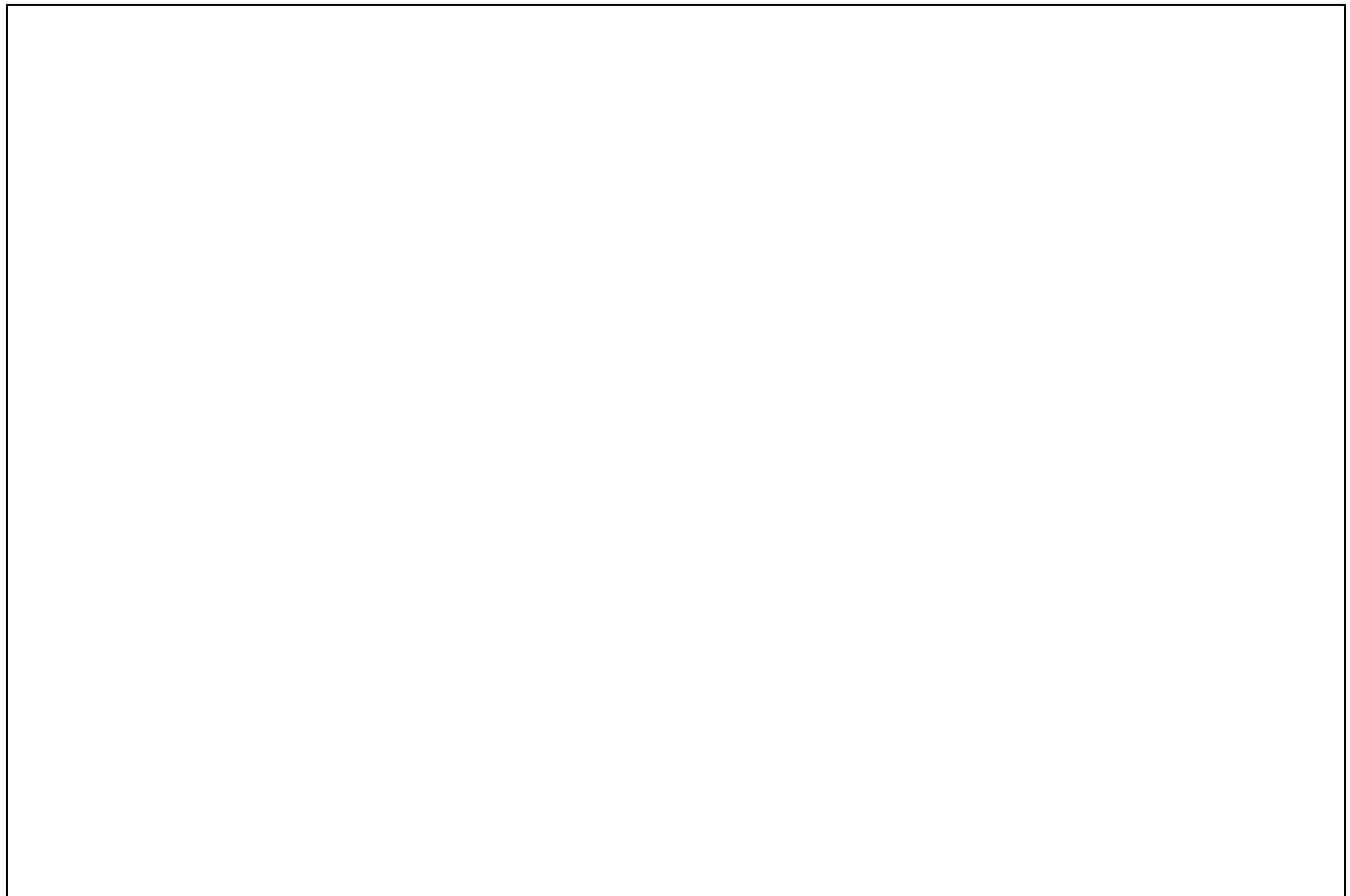
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Make a drawing if it helps you explain your thinking. Label your drawing.



Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Observing Plants in a Sample Study Site

Directions:

1. With your partner, place your string around an area in the habitat. This is your sample study site.
2. Observe the plants in your sample study site.
3. Draw the plants in your sample study site. Label your drawing.



Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Daily Written Reflection

Think of two very different plants that you have seen before. What did each one look like?

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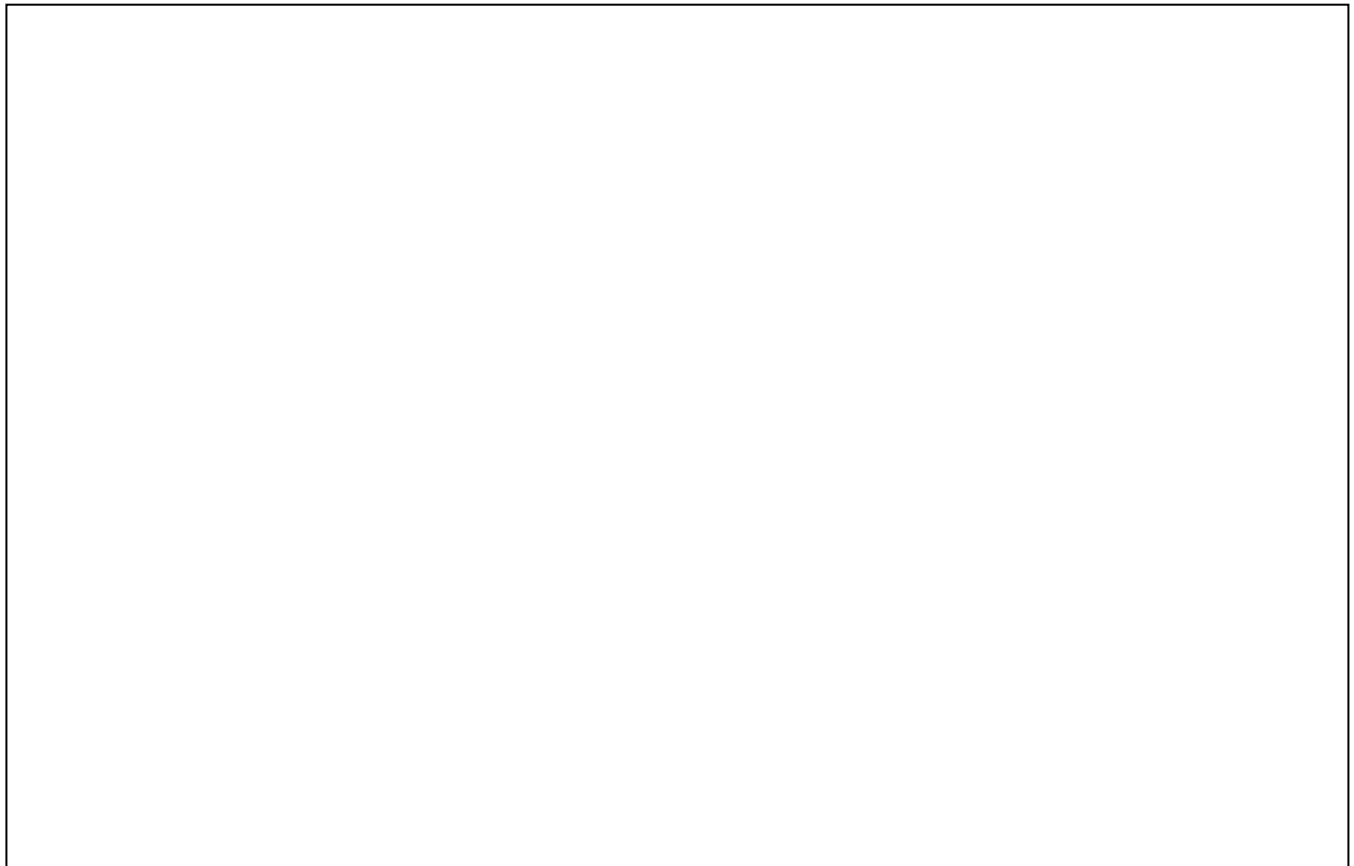
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Make a drawing if it helps you explain your thinking. Label your drawing.



Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Counting Trees in the Sample Study Site

Directions:

1. Use the table to record how many of each type of tree was growing in the Bengal Tiger Reserve sample study site in 1995 and in 2015.
2. Read and answer the questions below the table.

Type of tree	Number of trees in 1995	Number of trees in 2015
Chalta		
Fig		
Red silk		
Sal		

How did the number of trees change from 1995 to 2015?

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Did the number of trees change for every kind of tree from 1995 to 2015?  
How do you know?

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Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Investigating a Different Habitat

Directions:

1. With your partner, choose another habitat section in *Handbook of Habitats*.
2. Write the name of the habitat you chose.
3. With your partner, look through the section that you chose.
4. List three plants and three animals in that habitat.

Name of the habitat I chose: \_\_\_\_\_

Some of the plants in that habitat:

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

Some of the animals in that habitat:

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_



Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Daily Written Reflection

Why is it useful to compare maps of the same place at different times?

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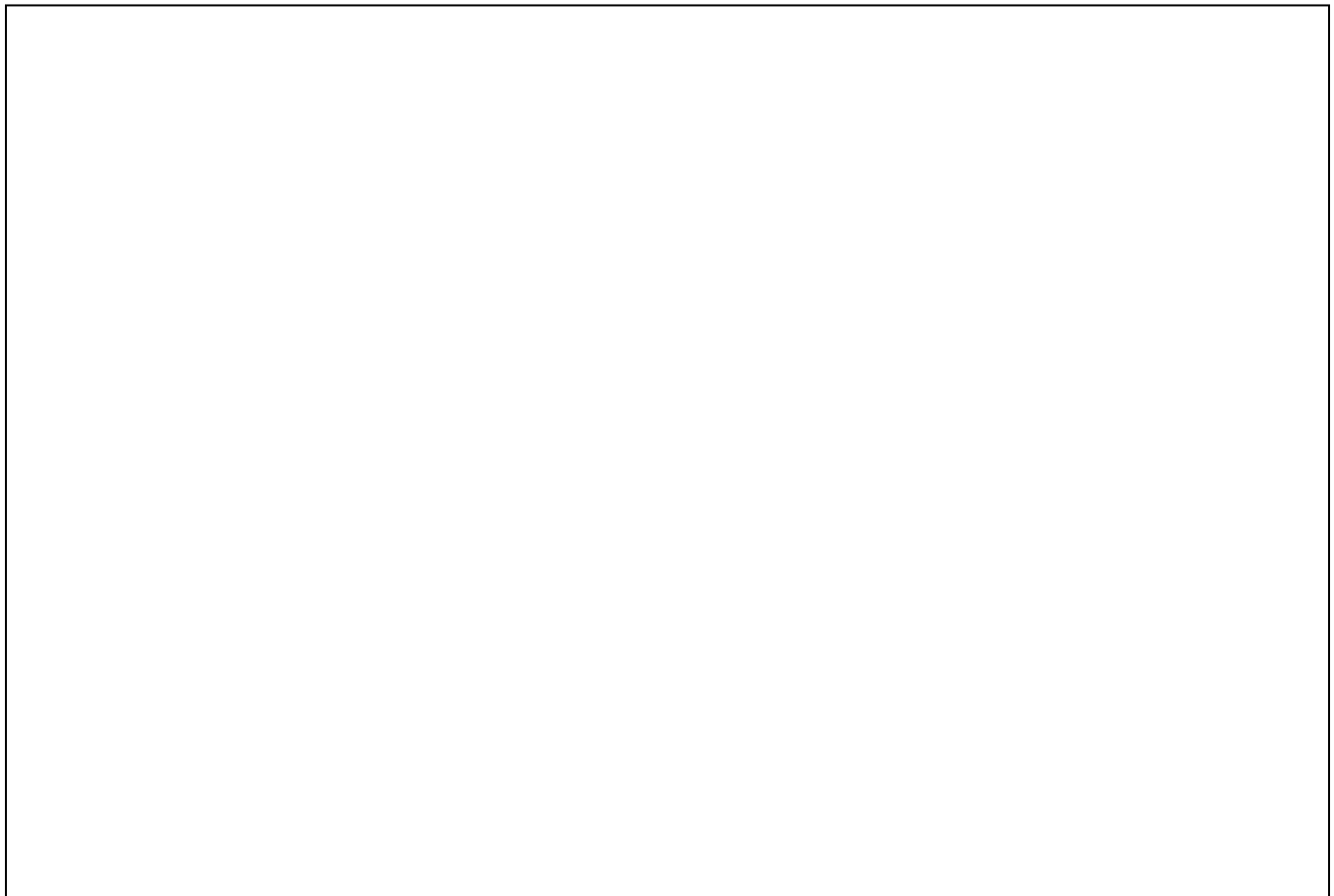
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Make a drawing if it helps you explain your thinking. Label your drawing.



Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Seed Observations

Directions:

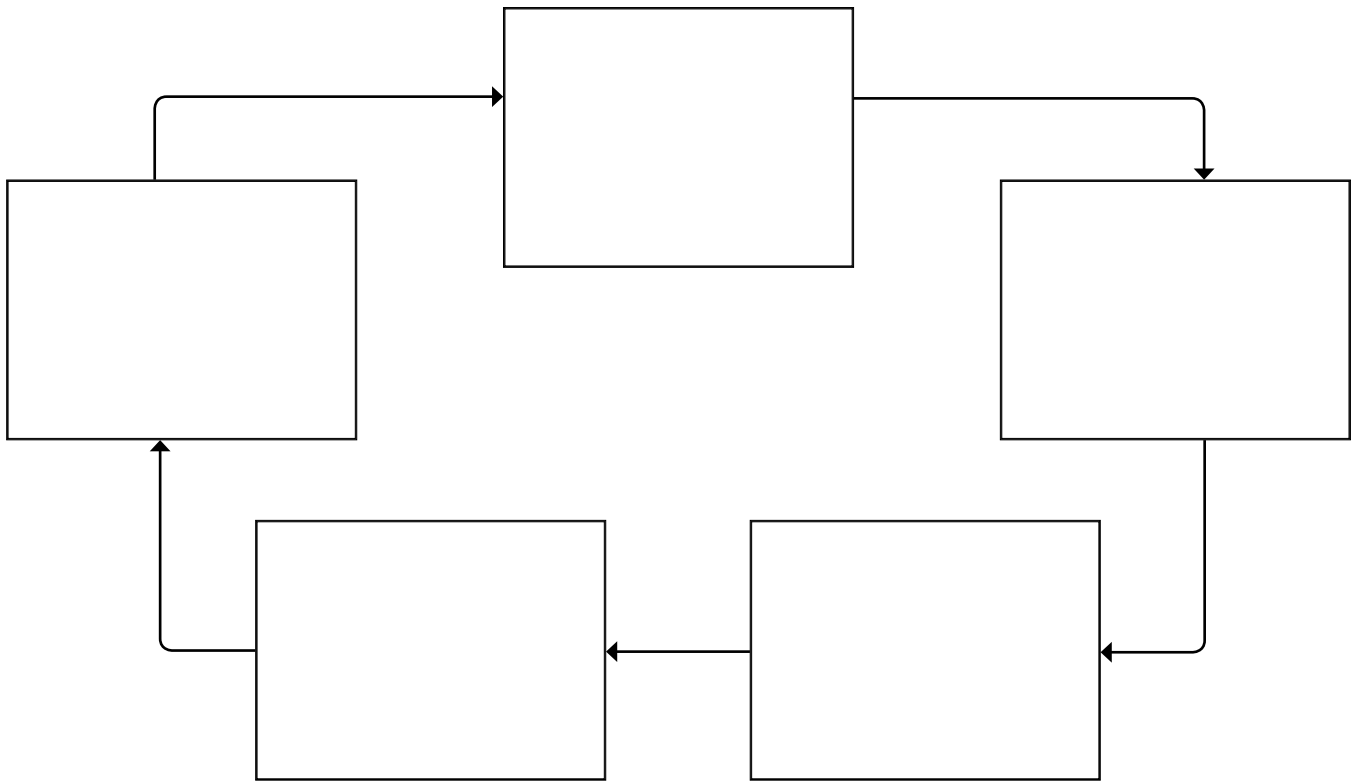
1. Put your seeds in order from biggest to smallest.
2. Pick two seeds that are different sizes.
3. Draw a picture of each seed in the boxes below.
4. Label your drawings "bigger" and "smaller."
5. Complete the sentence in each box.

<p>This seed is about the same size as a _____.</p>	<p>This seed is about the same size as a _____.</p>
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## New Plant Growth

Directions:

1. Put the pictures in order of how you think the plant grows.
2. Glue one picture in each box below.
3. Decide which picture is a picture of seeds. Then label it "seeds."
4. Decide which picture is a picture of a seed sprouting. Then label it "seed sprouting."
5. Decide which picture is a picture of a full-grown plant. Then label it "full-grown plant."



Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Daily Written Reflection

What do you think would happen to a seed if it was planted in an area without sunlight?

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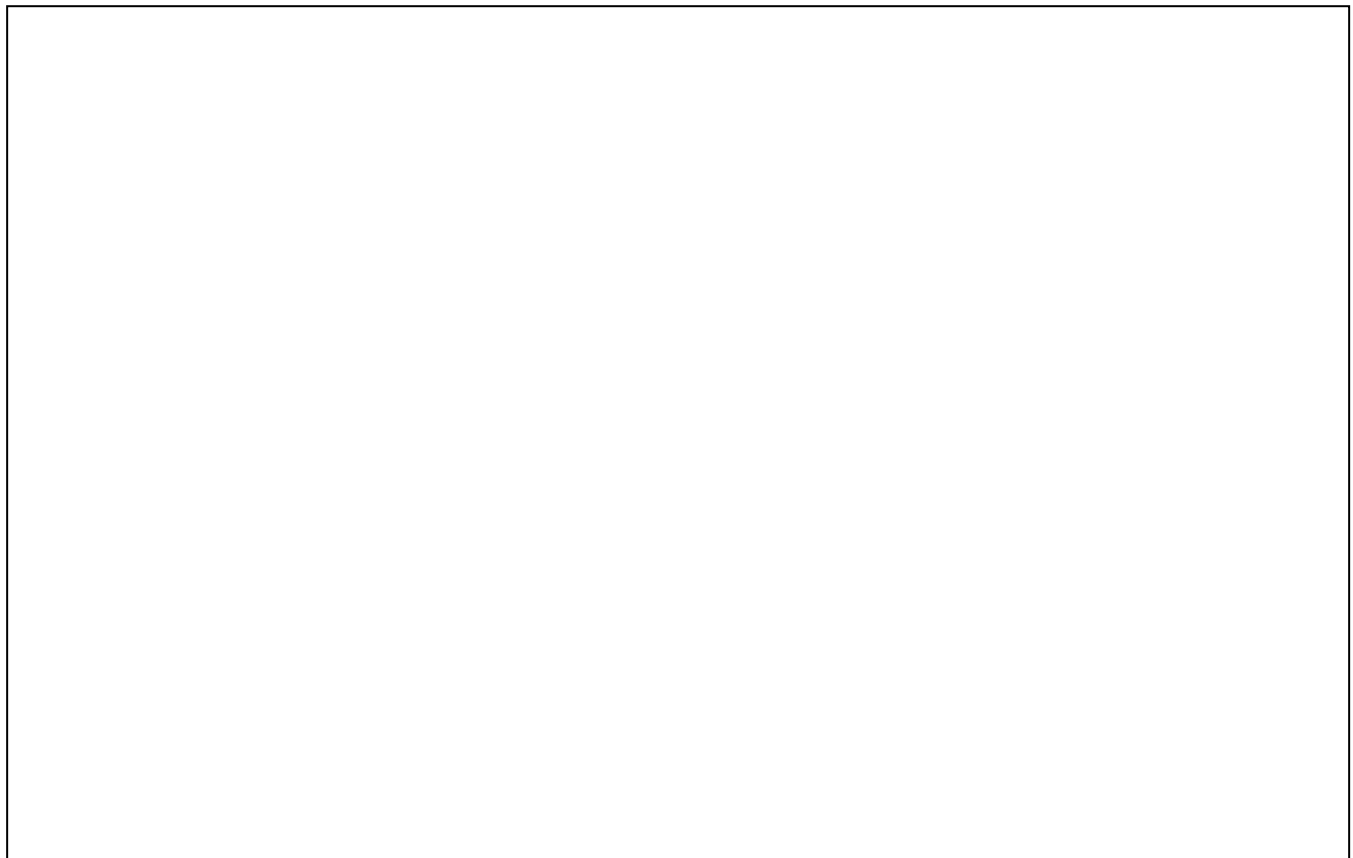
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Make a drawing if it helps you explain your thinking. Label your drawing.



## Water Investigation

Directions:

1. Draw what you think will happen to the seeds in the two containers below.

### Water every day



### No water



Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Water Investigation Table

Directions:

1. Count the seeds that sprouted in each container and complete the table below.

	<b>Seeds that got water every day</b>	<b>Seeds that did not get water</b>
<b>Number of seeds that sprouted</b>		

## Sunlight Investigation

Directions:

1. Draw what you think will happen to the seeds in the two containers below.

### Sunlight every day



### No sunlight



Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Sunlight Investigation Table: Growth After 3 Days

Directions:

1. Complete the table below.

	<b>Seeds that got sunlight every day</b>	<b>Seeds that did not get sunlight</b>
<b>Height of Plant 1</b>		
<b>Height of Plant 2</b>		
<b>Height of Plant 3</b>		
<b>Height of Plant 4</b>		



Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Sunlight Investigation Table: Growth After 3 Weeks

Directions:

1. Complete the table below.

	<b>Seeds that got sunlight every day</b>	<b>Seeds that did not get sunlight</b>
<b>Height of Plant 1</b>		
<b>Height of Plant 2</b>		
<b>Height of Plant 3</b>		
<b>Height of Plant 4</b>		

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Daily Written Reflection

How do you think scientists share their ideas with each other?

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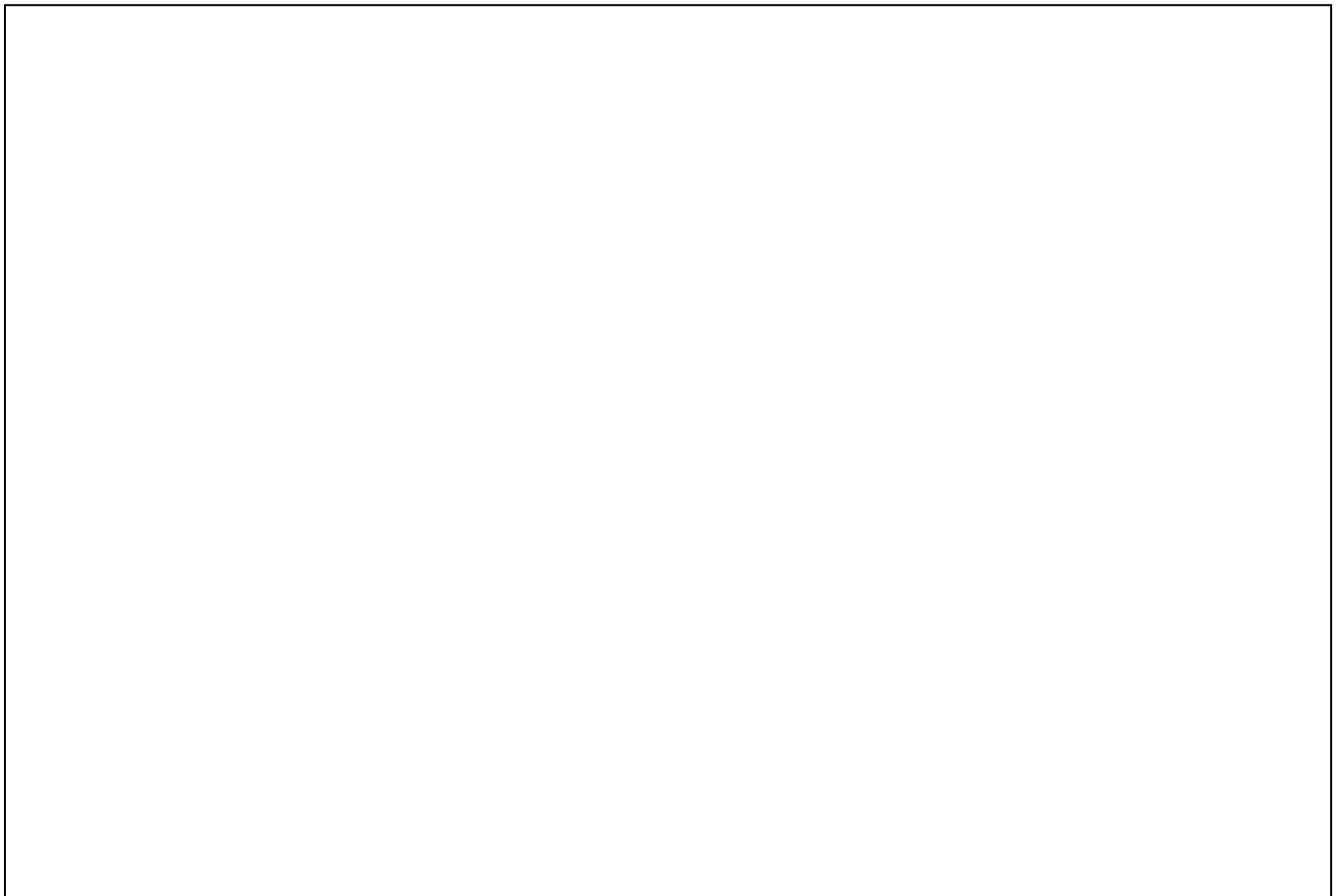
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Make a drawing if it helps you explain your thinking. Label your drawing.



Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Using Science Words to Write About How Plants Grow

Directions:

1. Read each question below.
2. Use science words to write an answer to each question.

Where do new plants come from?

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What do seeds need to grow into full-grown plants?

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Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Chapter 1: Check Your Understanding

This is a chance for you to reflect on your learning so far. This is not a test. Be open and truthful when you respond.

Scientists investigate in order to figure out how things work. Am I getting closer to figuring out why new chalta trees are not growing in the Bengal Tiger Reserve?

I understand that scientists use different ways to study the world. \_\_\_\_\_ Yes \_\_\_\_\_ Not yet

I understand where new chalta trees come from. \_\_\_\_\_ Yes \_\_\_\_\_ Not yet

I understand what chalta seeds need to grow into full-grown trees. \_\_\_\_\_ Yes \_\_\_\_\_ Not yet

I understand how chalta seeds get the things they need to grow into full-grown trees. \_\_\_\_\_ Yes \_\_\_\_\_ Not yet

I understand how the parts of the broadleaf forest habitat depend on each other. \_\_\_\_\_ Yes \_\_\_\_\_ Not yet

I think I understand or don't yet understand these ideas because

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What are you still wondering about the plants in the Bengal Tiger Reserve?

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Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Daily Written Reflection

Think of a plant. What parts does the plant have? What does the plant need to grow?

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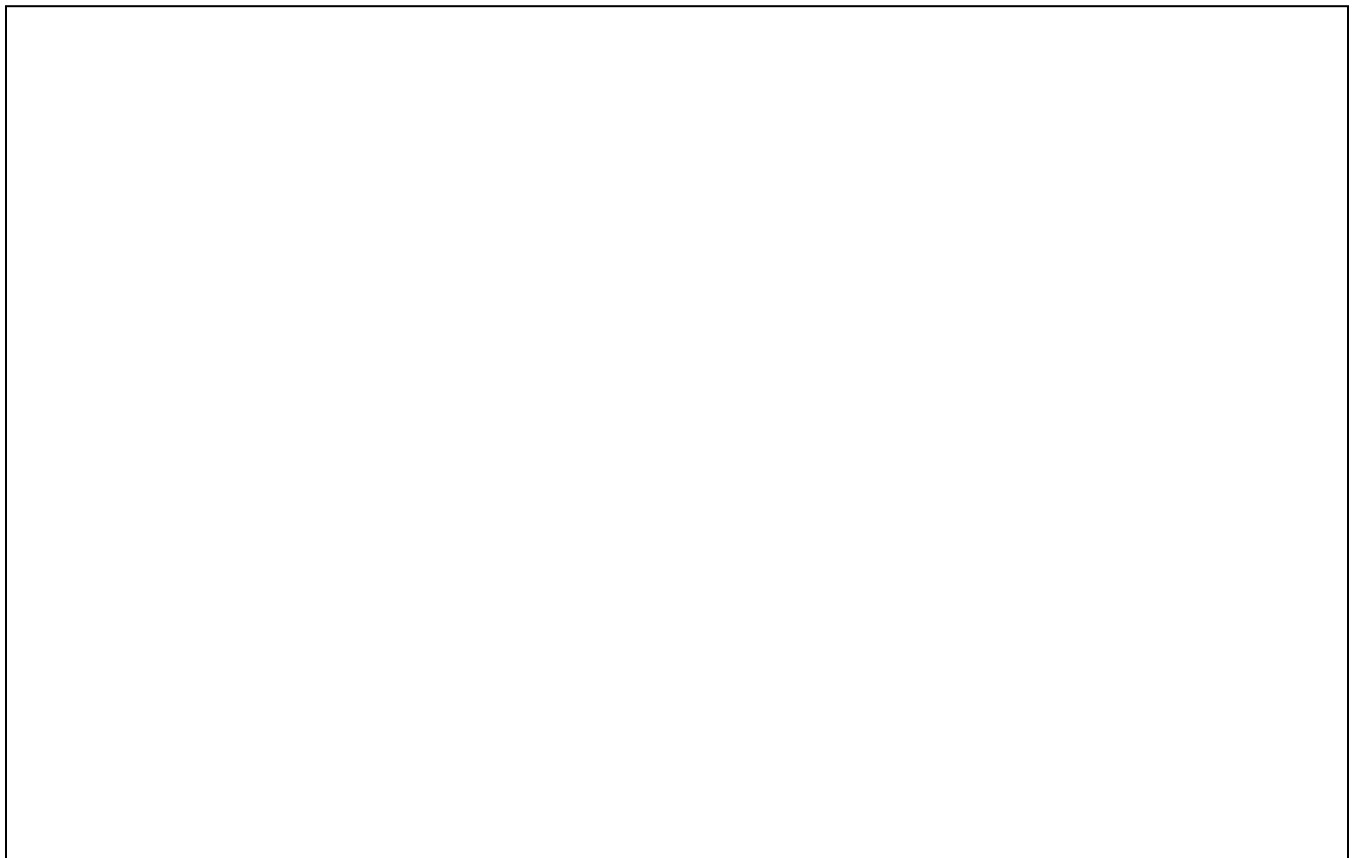
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Make a drawing if it helps you explain your thinking. Label your drawing.



Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Investigating Roots and Leaves

Directions:

1. Pick a root. Write the name of the plant that the root came from on the line below.
2. Measure and record the length of the root.
3. In the box, make a scientific drawing of the root.
4. On the next page, repeat Steps 1–3 with a leaf.

Plant: \_\_\_\_\_

The root is \_\_\_\_\_ centimeters long.

### Observations of Roots



Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Investigating Roots and Leaves (continued)

Plant: \_\_\_\_\_

The leaf is \_\_\_\_\_ centimeters long.

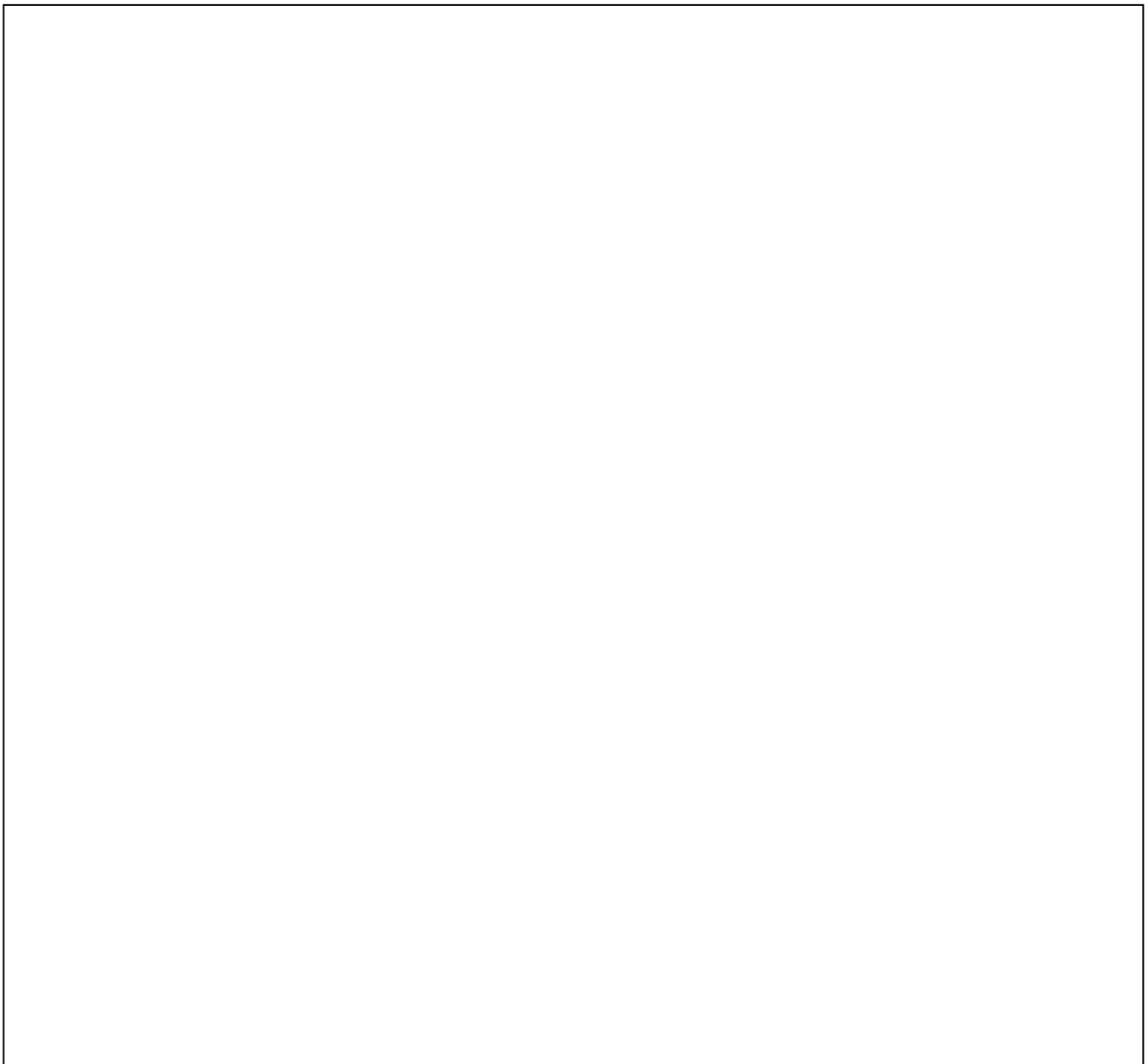
### Observations of Leaves



## Think-Draw-Pair-Share: What Do Plant Parts Do?

Directions:

1. Think about the question: *How do you think a plant's roots and leaves help the plant get what it needs to grow?*
2. In the box below, make a drawing to explain your ideas.
3. Label your drawing.
4. Use your drawing to discuss your ideas with your partner.





Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Daily Written Reflection

What do you think a plant uses its roots for? Why do you think that?

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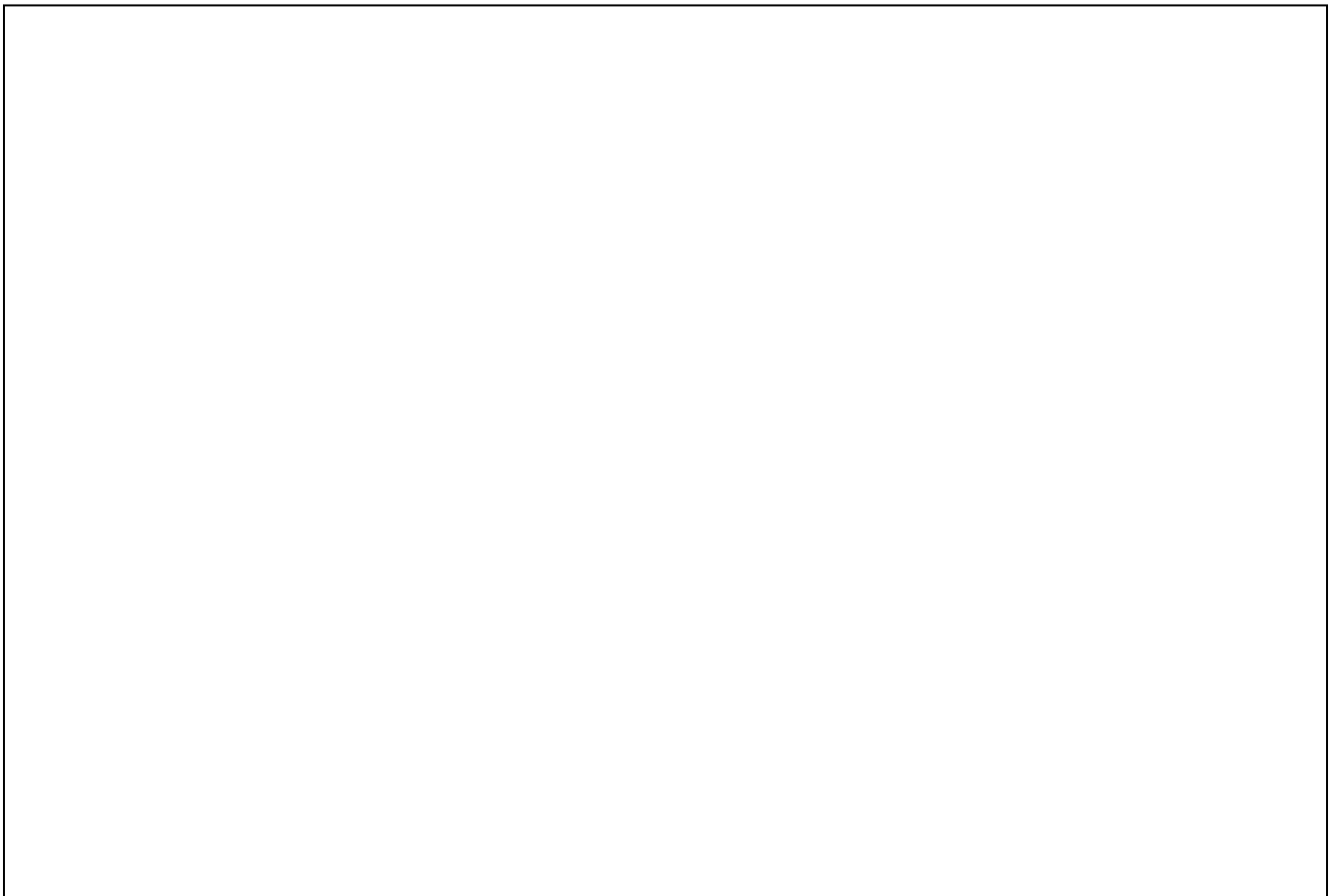
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Make a drawing if it helps you explain your thinking. Label your drawing.



## Getting Ready to Read: *A Plant Is a System*

Directions:

1. Before reading *A Plant Is a System*, read the sentences below.
2. If you agree with the sentence, write an “A” on the line before the sentence.
3. If you disagree with the sentence, write a “D” on the line before the sentence.
4. After you read the book, see if your ideas have changed. Be ready to explain your thinking.

\_\_\_\_\_ Leaves and roots work together to help a plant grow.

\_\_\_\_\_ Some plants do not have roots.

\_\_\_\_\_ Plants use their leaves to get sunlight.

\_\_\_\_\_ Roots take in water.

\_\_\_\_\_ All plants live in the soil.

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## What Do the Parts of a Plant Do?

Directions:

1. Read *A Plant Is a System*.
2. As you read, think about the purpose for reading: *Find out how a plant uses its parts to get the water and sunlight it needs to grow.*
3. On the lines below, write what each part of the plant does.

The roots of the plant \_\_\_\_\_.

The leaves of the plant \_\_\_\_\_.

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Reading Reflection: *A Plant Is a System*

Read page 6. Why are leaves an important part of a plant?

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Read page 8. Why are roots an important part of a plant?

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Read page 10 and look at the diagram. Why is the stem an important part of a plant?

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Read page 11 and look at the diagram. Why are the tubes inside stems an important part of a plant?

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A plant is a system. What evidence from the book supports this?

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Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Daily Written Reflection

In the book *A Plant Is a System*, what's something that you found surprising or interesting?

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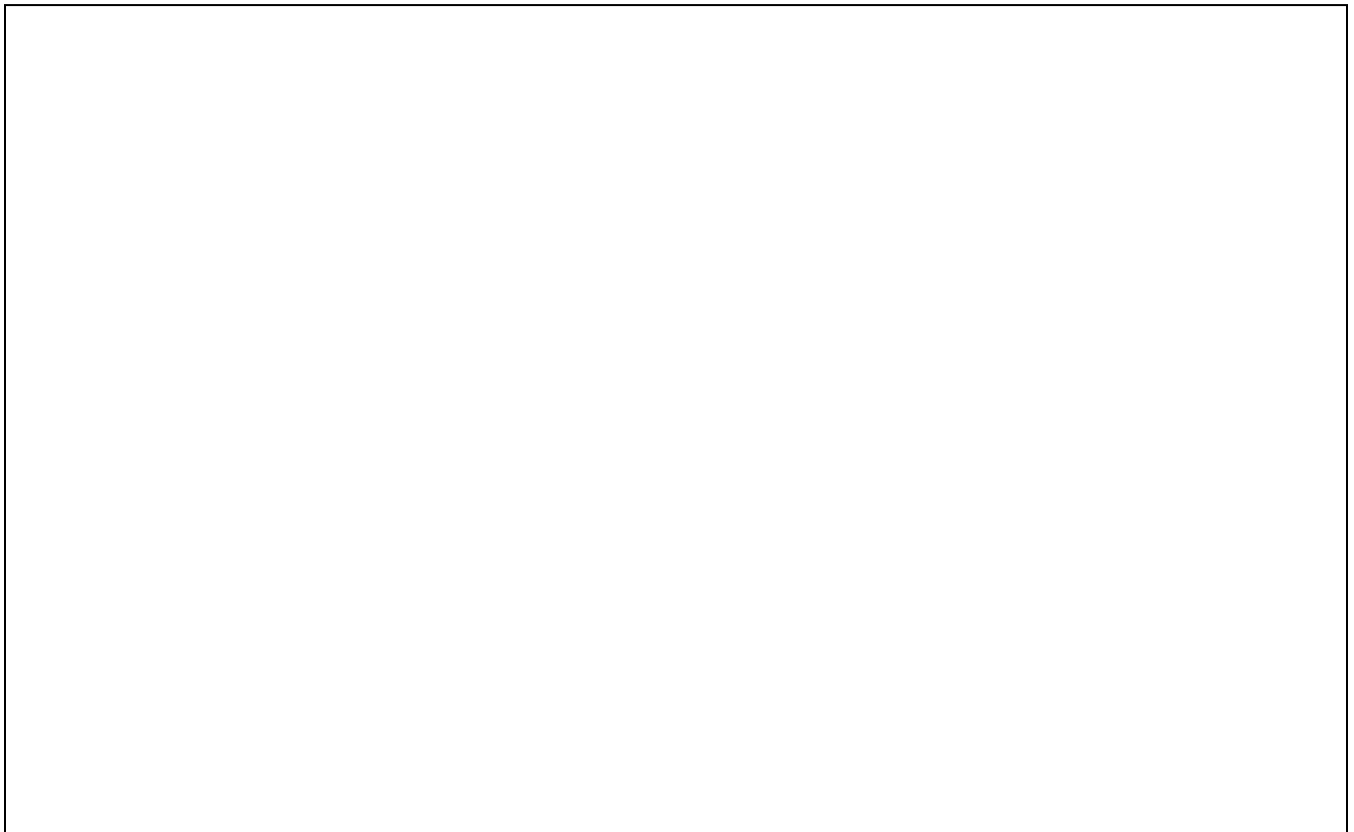
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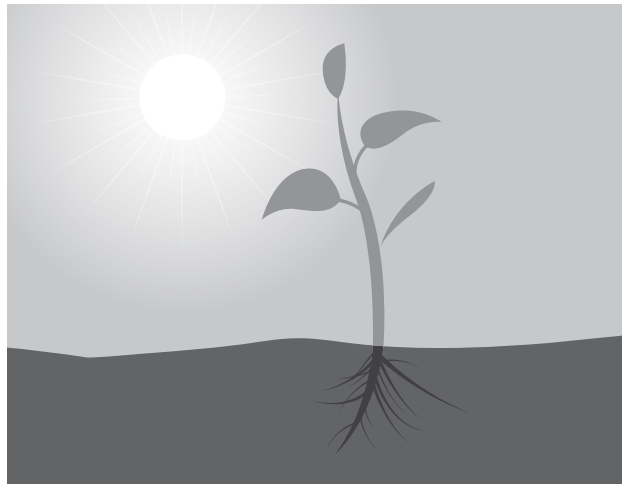
Make a drawing if it helps you explain your thinking. Label your drawing.



## A Plant Is a System

Directions:

1. Read pages 8–10 in *A Plant Is a System* with your partner.
2. Label each part of the plant in the box below.
3. Draw arrows to show how the plant uses sunlight and water.
4. Answer the questions below.



How is a plant a system? How does it use its parts to get what it needs to grow?

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Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Daily Written Reflection

You've learned that a plant is a system made of parts that work together. Think of another system you have seen before. Describe the system and its parts.

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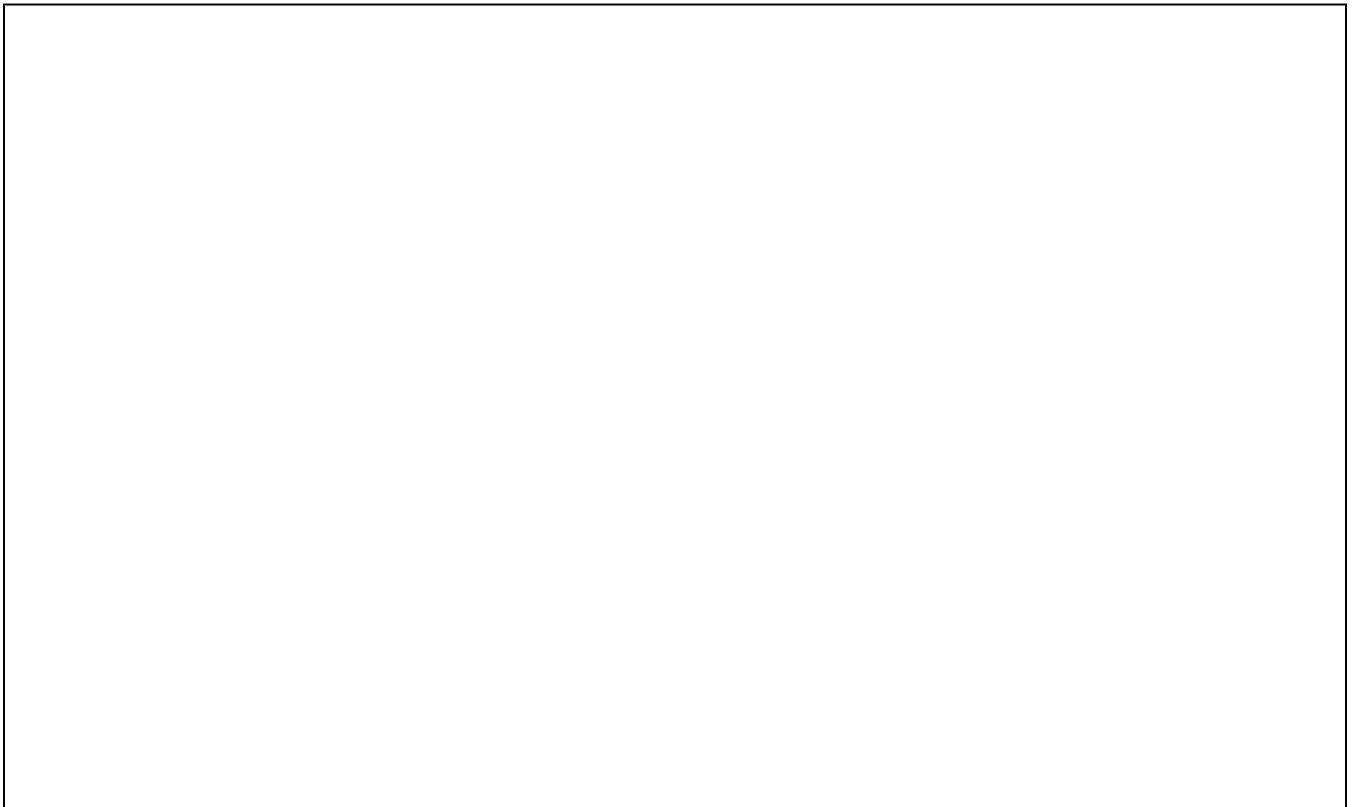
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Make a drawing if it helps you explain your thinking. Label your drawing.

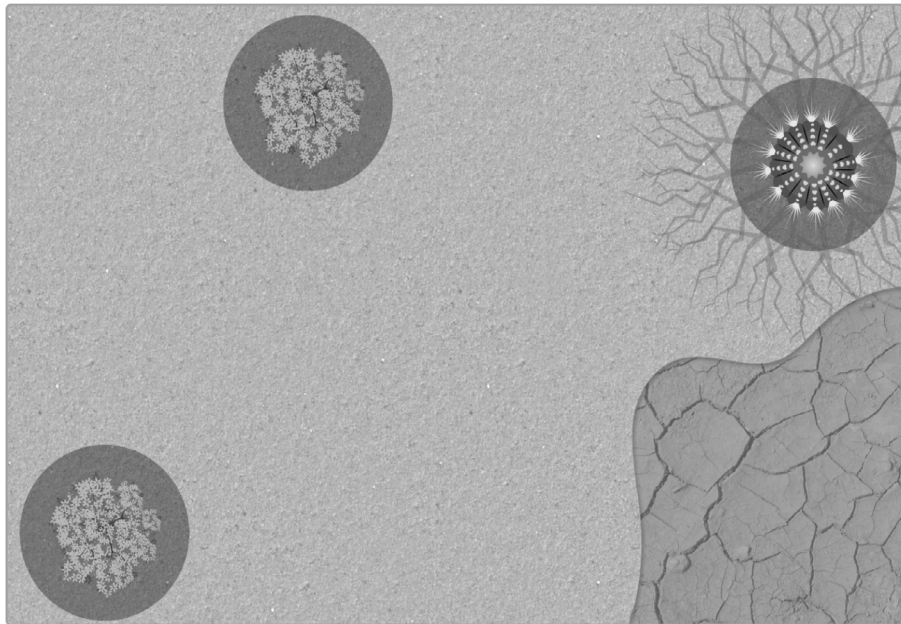


## A Good Place to Grow

Directions:

1. In the picture below, circle one spot that is a good place for a new plant to grow.
2. Mark with an X one spot that is not a good place for a new plant to grow.
3. Answer the questions below.

### Desert Habitat



Why do you think the spot you circled is a good place for a new plant to grow?

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Why do you think the spot you marked with an X is not a good place for a new plant to grow?

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Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Daily Written Reflection

Why do you think it is important to write scientific explanations?

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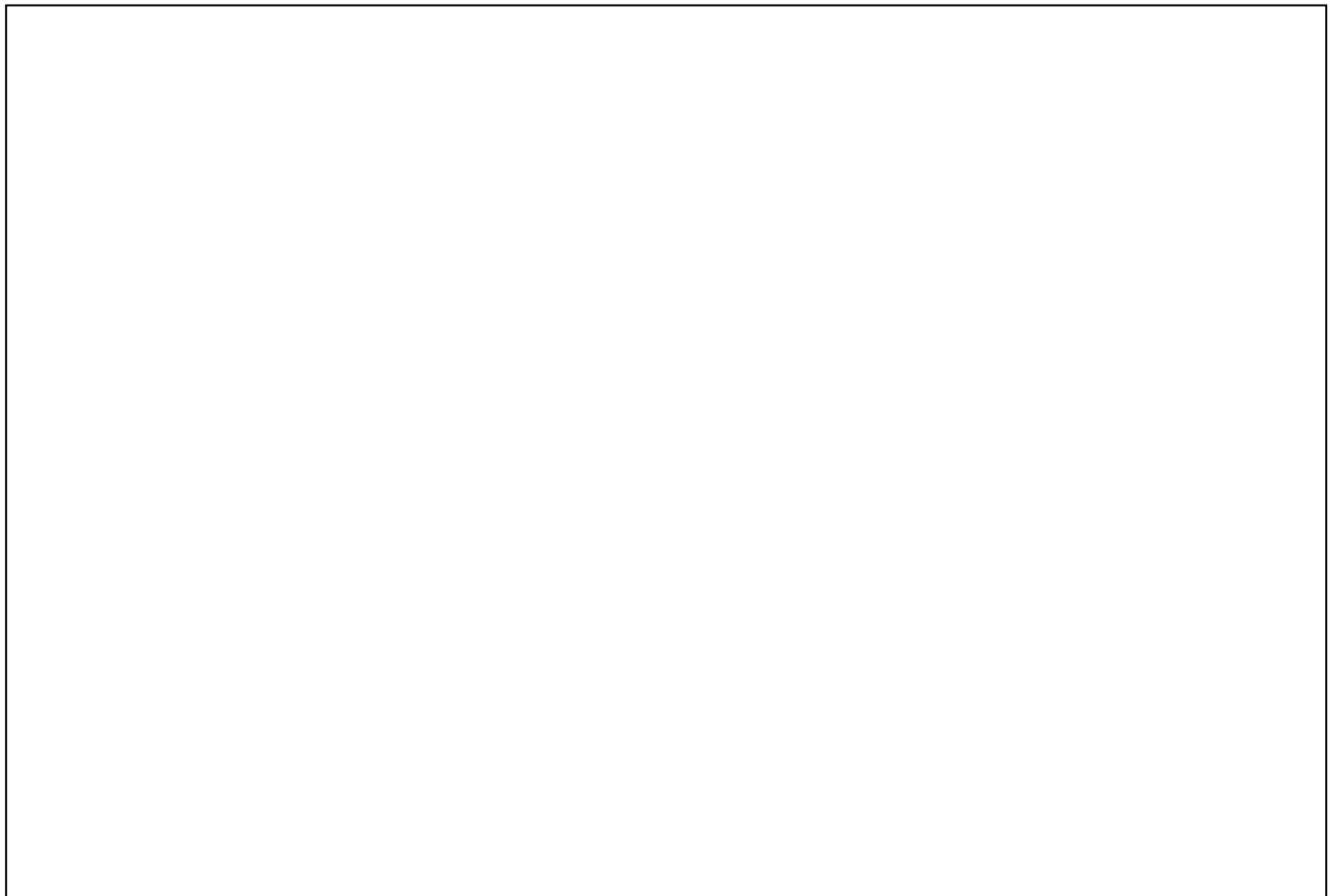
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Make a drawing if it helps you explain your thinking. Label your drawing.



Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Writing a Scientific Explanation About Chalta Seeds

Directions:

1. Discuss the question below with your partner.
2. Complete the topic sentence that answers the question.
3. Write supporting ideas by completing the sentences.

**Question:** Why aren't the chalta seeds getting the sunlight and water they need to grow into full-grown trees?

**Topic sentence:**

The chalta seeds are not getting what they need to grow into full-grown

trees **because** \_\_\_\_\_

\_\_\_\_\_

**Supporting ideas:**

The seeds need \_\_\_\_\_ to \_\_\_\_\_

\_\_\_\_\_.

The seeds also need \_\_\_\_\_ to \_\_\_\_\_

\_\_\_\_\_.

The seeds can't get the \_\_\_\_\_ and \_\_\_\_\_

they need to grow without \_\_\_\_\_.

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Chapter 2: Check Your Understanding

This is a chance for you to reflect on your learning so far. This is not a test. Be open and truthful when you respond.

Scientists investigate in order to figure out how things work. Am I getting closer to figuring out why new chalta trees are not growing in the Bengal Tiger Reserve?

I understand that scientists use different ways to study the world. \_\_\_\_\_ Yes \_\_\_\_\_ Not yet

I understand where new chalta trees come from. \_\_\_\_\_ Yes \_\_\_\_\_ Not yet

I understand what chalta seeds need to grow into full-grown trees. \_\_\_\_\_ Yes \_\_\_\_\_ Not yet

I understand how chalta seeds get the things they need to grow into full-grown trees. \_\_\_\_\_ Yes \_\_\_\_\_ Not yet

I understand how the parts of the broadleaf forest habitat depend on each other. \_\_\_\_\_ Yes \_\_\_\_\_ Not yet

I think I understand or don't yet understand these ideas because

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What are you still wondering about the plants in the Bengal Tiger Reserve?

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Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Daily Written Reflection

Think about your own habitat. What are the parts of your habitat?

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Make a drawing if it helps you explain your thinking. Label your drawing.



## Think-Draw-Pair-Share: Seeds and Habitats

Directions:

1. Think about the question: *What things in a habitat might help seeds get to new places?*
2. In the box below, make a drawing to explain your ideas.
3. Label your drawing.
4. Use your drawing to discuss your ideas with your partner.

A large, empty rectangular box with a thin black border, intended for students to draw and label their ideas about how seeds travel in a habitat.

## Getting Ready to Read: *Habitat Scientist*

Directions:

1. Before reading *Habitat Scientist*, read each sentence below.
2. If you agree with the sentence, write an "A" on the line before the sentence.
3. If you disagree with the sentence, write a "D" on the line before the sentence.
4. After you read the book, see if your ideas have changed. Be ready to explain your thinking.

\_\_\_\_\_ Humans are a part of every habitat.

\_\_\_\_\_ Plants do not live in habitats.

\_\_\_\_\_ One habitat can have many different parts.

\_\_\_\_\_ All animals live in the same habitat.

\_\_\_\_\_ A plant's habitat must include sunlight, water, and space to grow.

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## ***Habitat Scientist: Parts of the Larkspur Plant's Habitat***

Directions:

1. Turn to page 12 in *Habitat Scientist*.
2. On the lines below, list the parts of the habitat.
3. Draw a check mark next to the things in your list that might help a larkspur seed get to a new place.

### **Parts of the Colorado Mountain Habitat**

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
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- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

Name: \_\_\_\_\_ Date: \_\_\_\_\_

### Reading Reflection: *Habitat Scientist*

Reread pages 9–10 about how hummingbirds and larkspur flowers depend on each other.

In your own words, explain how hummingbirds and larkspur flowers depend on each other.

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What questions do you have about how new larkspur plants grow?

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Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Daily Written Reflection

What did you learn from reading *Habitat Scientist* that was interesting or surprising to you?

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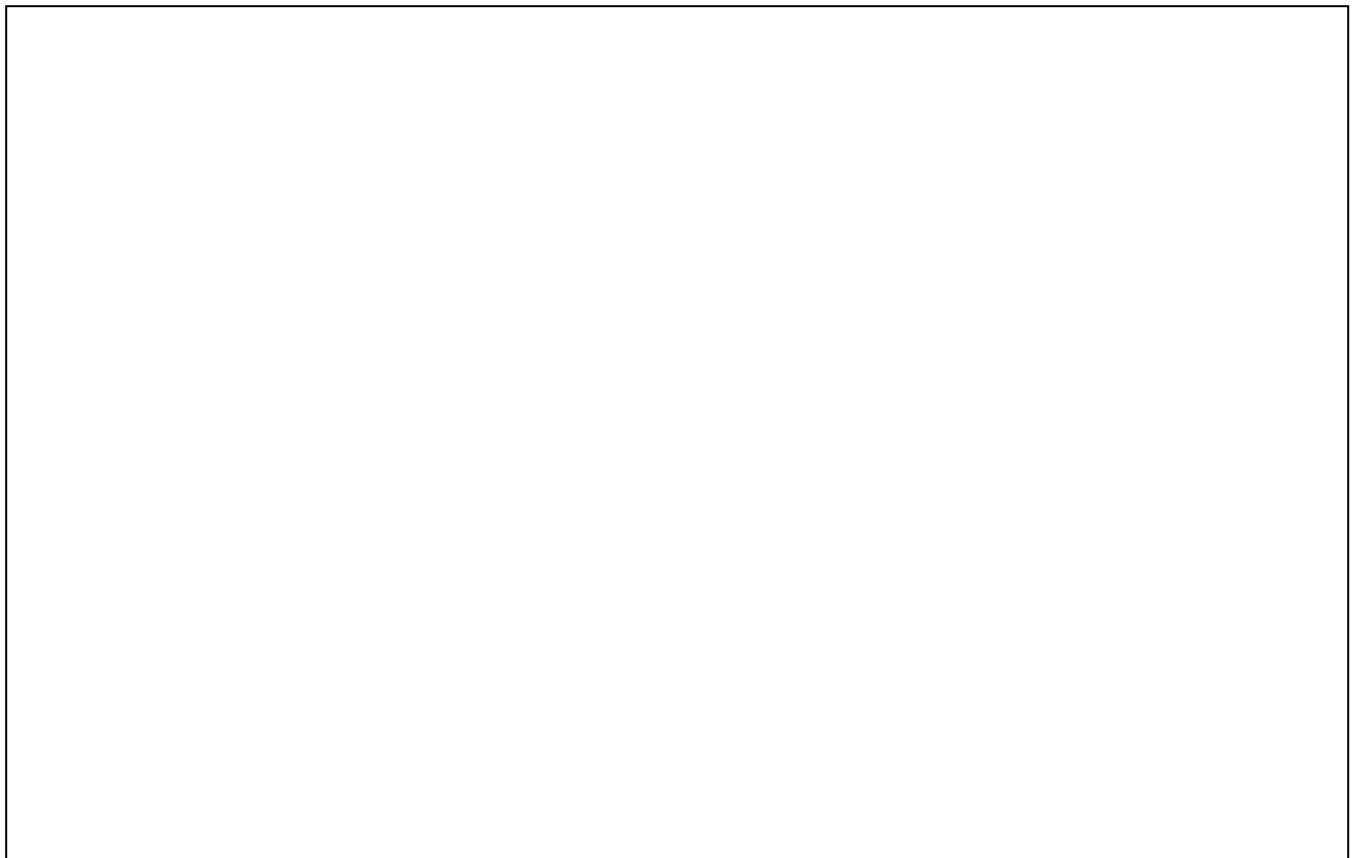
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Make a drawing if it helps you explain your thinking. Label your drawing.



Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Dispersing Seeds Model Part 1: Counting Fruits

Directions:

1. Write the name of your group's bird: "Flitterbird" or "Strongbill."
2. Use the Scientist Data Sheet: Bird Observations to count the number of fruits your bird ate.
3. Record your data below.

My group's bird: \_\_\_\_\_

Total number of fruits we ate: \_\_\_\_\_

Number of yummyberries: \_\_\_\_\_

Number of sweetpink fruits: \_\_\_\_\_

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Daily Written Reflection

Think of a cherry tree that grows in a forest. How do you think the cherry seeds get to new places in their habitat?

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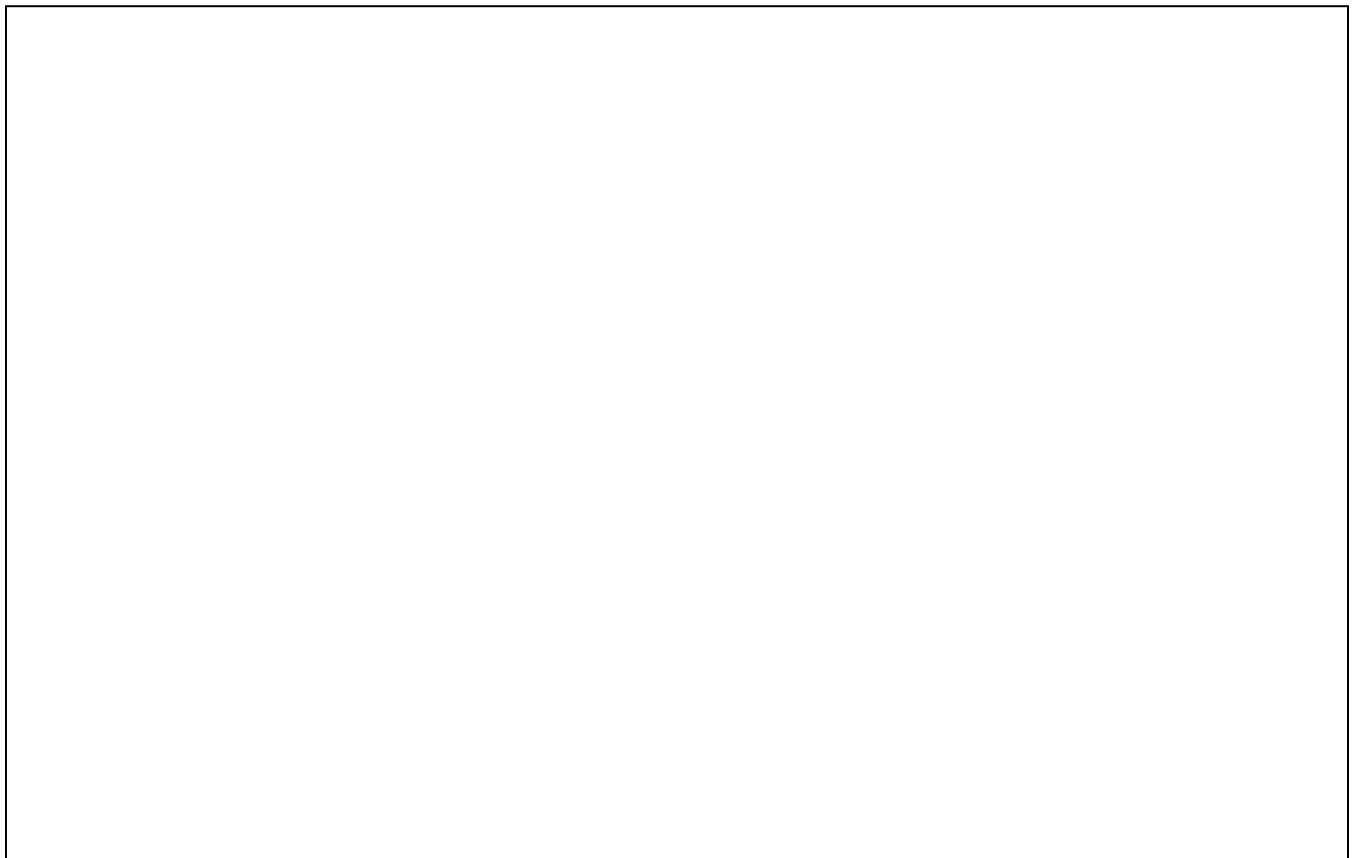
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Make a drawing if it helps you explain your thinking. Label your drawing.



Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Dispersing Seeds Model Part 2: Measuring Droppings

Directions:

1. Write the name of your group's bird: "Flitterbird" or "Strongbill."
2. With your partner, count the seeds inside your dropping.
3. Record your data below.
4. Use the flitterbird and strongbill droppings data that you collected as a class to help you complete the sentences below.

My group's bird: \_\_\_\_\_

Total number of seeds in our bird dropping: \_\_\_\_\_

Number of yummyberry seeds: \_\_\_\_\_

Number of sweetpink seeds: \_\_\_\_\_

I think the \_\_\_\_\_ disperses yummyberry seeds because \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_.

I think the \_\_\_\_\_ disperses sweetpink seeds because \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_.

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Daily Written Reflection

Is it helpful to use models like the Dispersing Seeds Model in science? Why do you think so?

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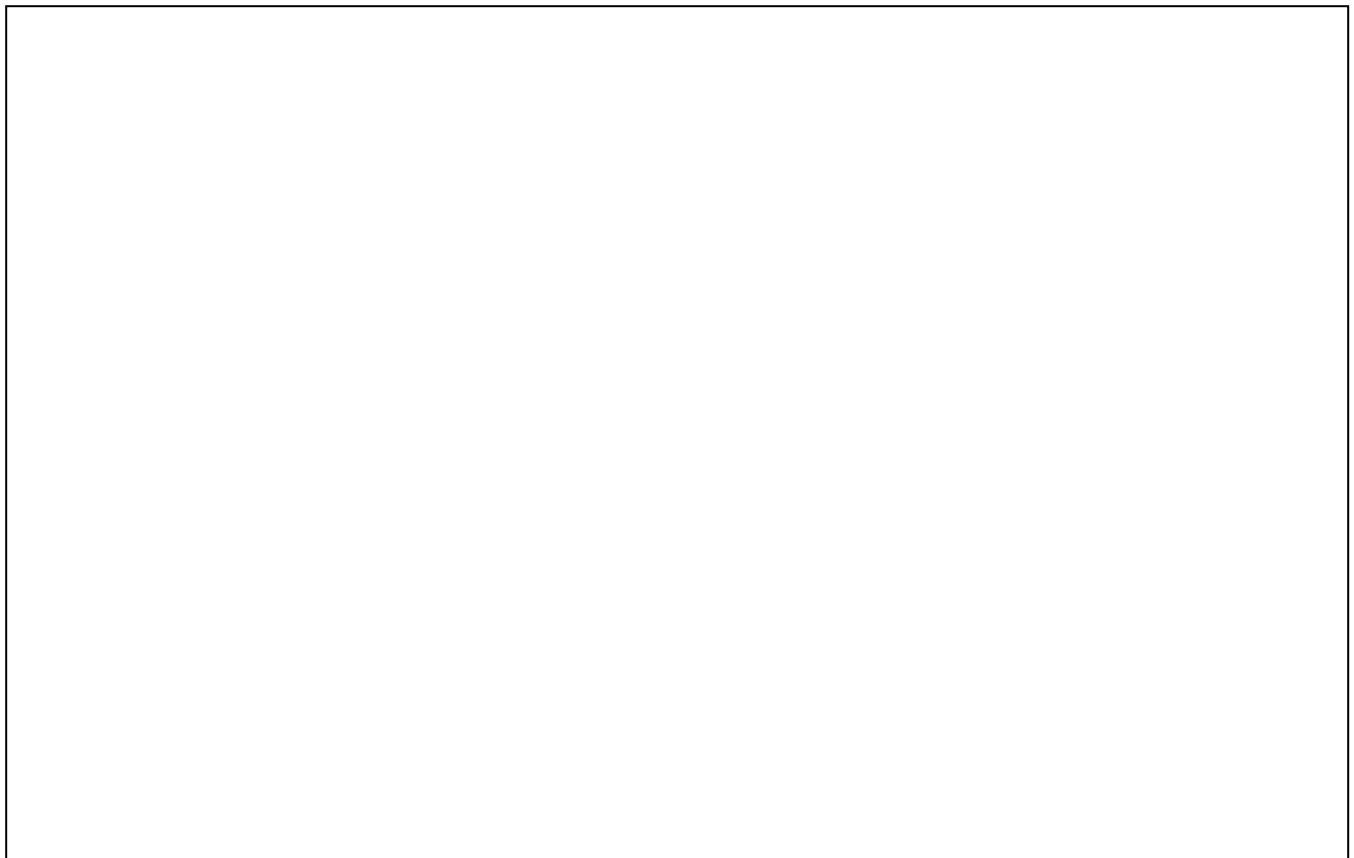
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Make a drawing if it helps you explain your thinking. Label your drawing.



Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Identifying the Parts of the Broadleaf Forest Habitat

Directions:

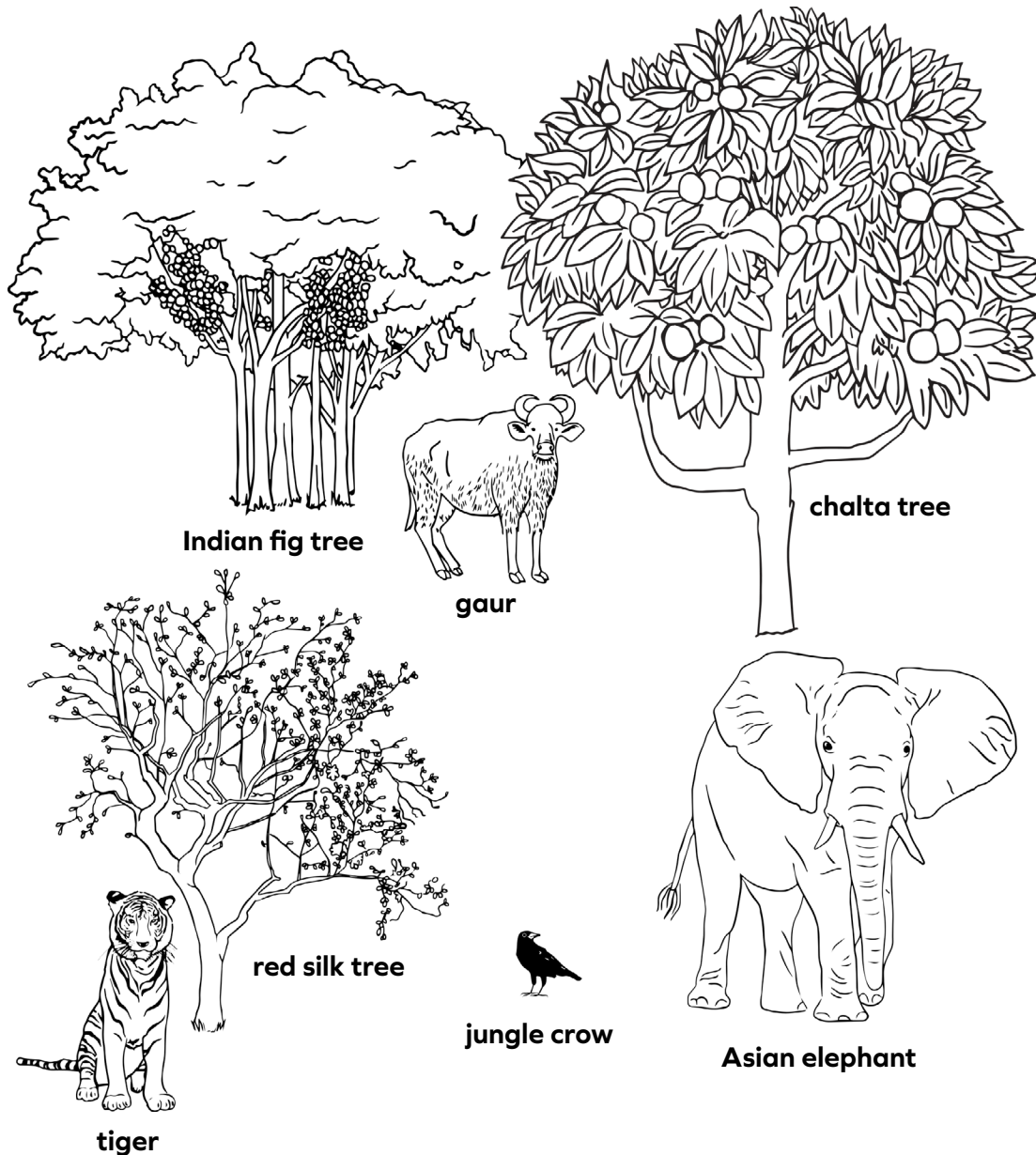
1. Read pages 16–21, the “Broadleaf Forest in India” section, in *Handbook of Habitats*.
2. In the table below, list the different parts of the broadleaf forest habitat.

<b>Plants</b>	<b>Animals</b>	<b>Other important parts</b>

## Broadleaf Forest Habitat Diagram

Directions:

1. Label the drawing below to show how the plants and animals in the broadleaf forest habitat depend on each other.
2. Add words or drawings to help you explain.



Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Daily Written Reflection

Bears can disperse berry seeds. What do you think the bears depend on the berries for? Why do you think so?

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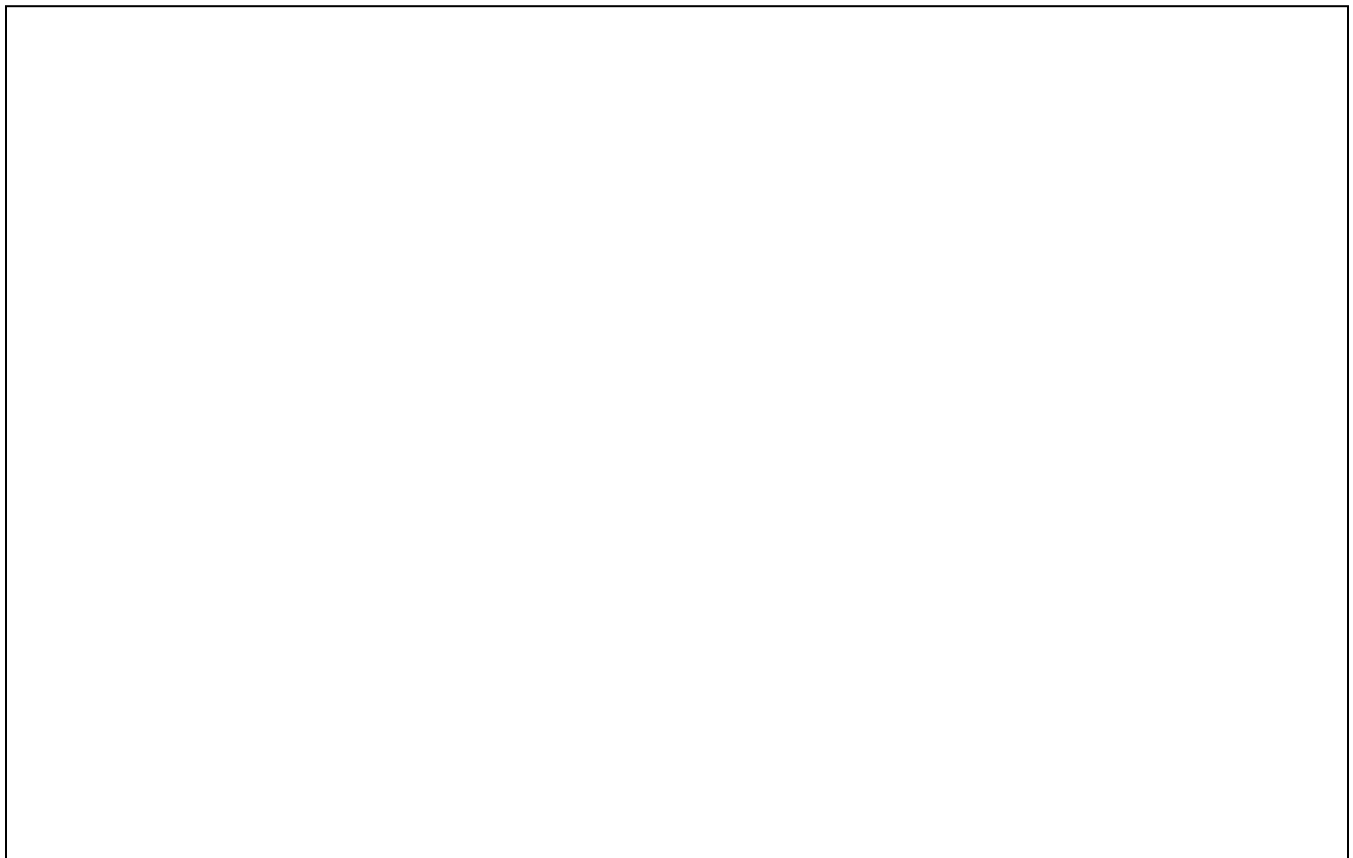
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Make a drawing if it helps you explain your thinking. Label your drawing.





Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Seed Dispersal in Different Habitats

Directions:

1. Record your purpose for reading on the lines below.
2. Read about the seeds in each habitat.
3. Complete the table.

My purpose for reading is to \_\_\_\_\_

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<b>Habitat</b>	<b>Seed</b>	<b>How do you think the seeds are dispersed?</b>
City Park	Acorn	
Desert	Mesquite	
Everglades	Gumbo-limbo	

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Writing About Seed Dispersal

Directions:

1. Pick one habitat below.
2. Complete the sentences about that habitat by using information you gathered from *Handbook of Habitats*.

### City Park Habitat

The oak tree depends on \_\_\_\_\_

to \_\_\_\_\_.

The squirrel depends on \_\_\_\_\_

to \_\_\_\_\_.

### Desert Habitat

The mesquite tree depends on \_\_\_\_\_

to \_\_\_\_\_.

The coyote depends on \_\_\_\_\_

to \_\_\_\_\_.

### Everglades Habitat

The gumbo-limbo tree depends on \_\_\_\_\_

to \_\_\_\_\_.

The vireo depends on \_\_\_\_\_

to \_\_\_\_\_.

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Daily Written Reflection

Think about a time you collected data in science class. Why was it helpful to collect data?

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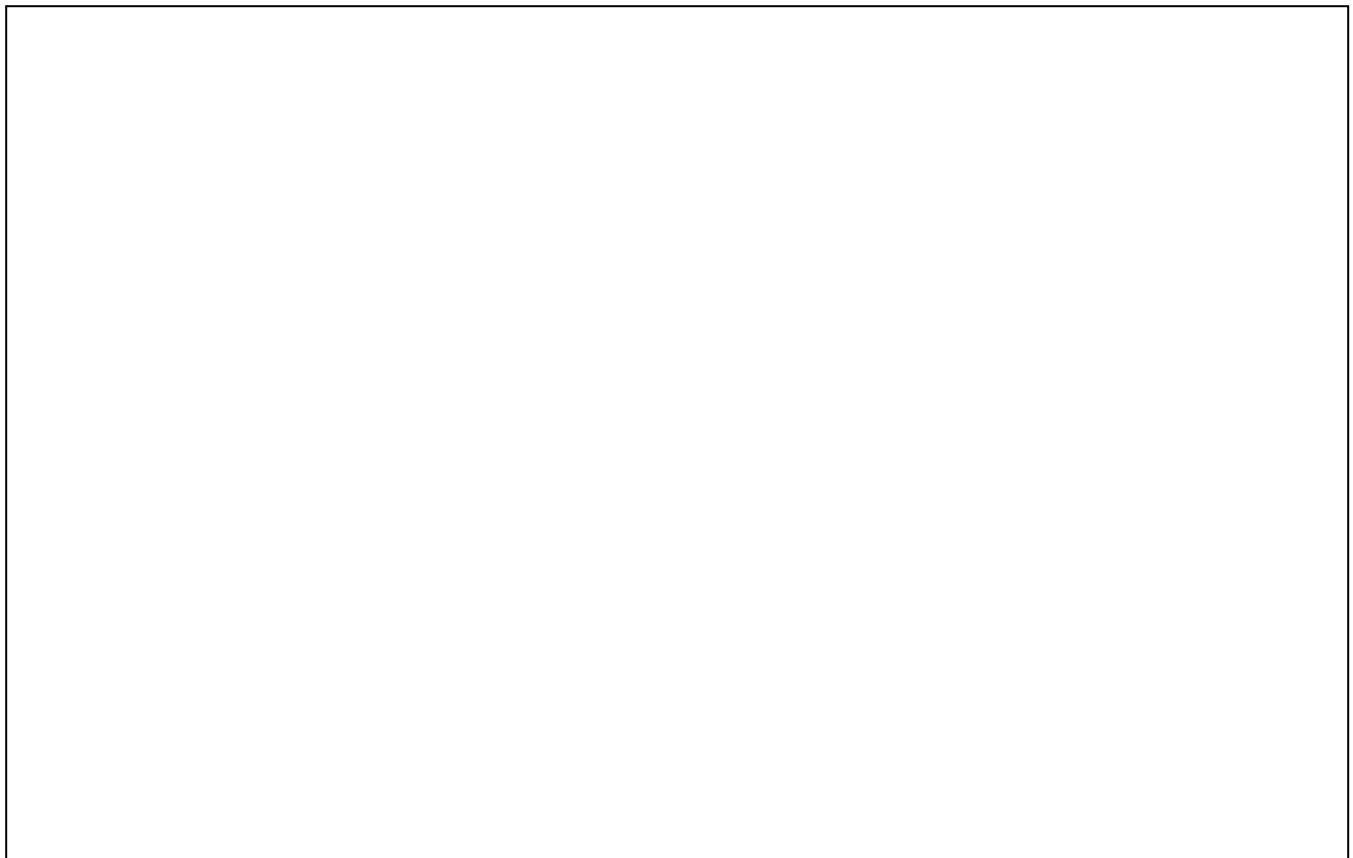
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Make a drawing if it helps you explain your thinking. Label your drawing.



## Writing a Scientific Explanation

Directions:

1. With your partner, discuss the question below.
2. Complete the topic sentence that answers the question.
3. Write a supporting idea by completing the sentence.
4. Add more supporting ideas that will help others better understand your topic sentence.

**Question:** Why aren't the chalta seeds getting to places where they can grow?

**Topic sentence:**

The chalta seeds are not getting to places where they can grow **because**

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**Supporting ideas:**

The chalta trees depend on \_\_\_\_\_

to \_\_\_\_\_

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Name: \_\_\_\_\_ Date: \_\_\_\_\_

### Chapter 3: Check Your Understanding

This is a chance for you to reflect on your learning so far. This is not a test. Be open and truthful when you respond.

Scientists investigate in order to figure out how things work. Am I getting closer to figuring out why new chalta trees are not growing in the Bengal Tiger Reserve?

I understand that scientists use different ways to study the world. \_\_\_\_\_ Yes \_\_\_\_\_ Not yet

I understand where new chalta trees come from. \_\_\_\_\_ Yes \_\_\_\_\_ Not yet

I understand what chalta seeds need to grow into full-grown trees. \_\_\_\_\_ Yes \_\_\_\_\_ Not yet

I understand how chalta seeds get the things they need to grow into full-grown trees. \_\_\_\_\_ Yes \_\_\_\_\_ Not yet

I understand how the parts of the broadleaf forest habitat depend on each other. \_\_\_\_\_ Yes \_\_\_\_\_ Not yet

I think I understand or don't yet understand these ideas because

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What are you still wondering about the plants in the Bengal Tiger Reserve?

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Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Daily Written Reflection

Think about all the ways a plant scientist might investigate plants and their habitats. List your ideas below.

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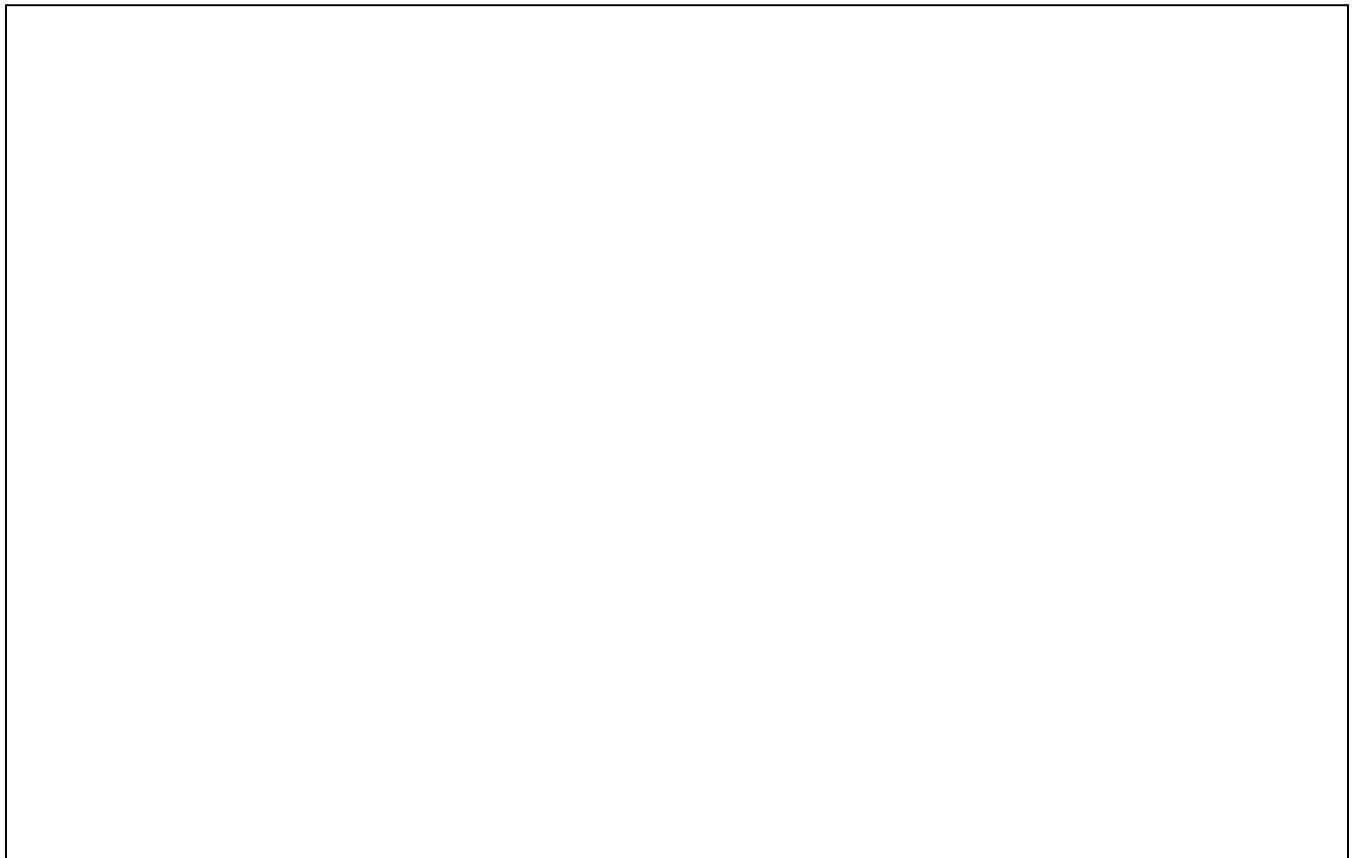
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Make a drawing if it helps you explain your thinking. Label your drawing.



Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Think-Draw-Pair-Share: Sal and Red Silk Trees

Directions:

1. Think about the question: *How do you think the seeds of the sal tree and red silk tree are dispersed?*
2. In the box below, make a drawing to explain your ideas.
3. Label your drawing.
4. Use your drawing to discuss your ideas with your partner.

A large, empty rectangular box with a thin black border, intended for students to draw and label their ideas about seed dispersal.



## Getting Ready to Read: *Investigating Seeds*

Directions:

1. Before reading the book *Investigating Seeds*, read each sentence below.
2. If you agree with the sentence, write an “A” on the line before the sentence.
3. If you disagree with the sentence, write a “D” on the line before the sentence.
4. After you read the book, see if your ideas have changed. Be ready to explain your thinking.

\_\_\_\_\_ Wind can disperse seeds.

\_\_\_\_\_ Animals can disperse seeds by carrying the seeds on their fur.

\_\_\_\_\_ The only way to measure how seeds are dispersed is by counting the number of seeds that get to a new place.

\_\_\_\_\_ Scientists can use models to investigate how seeds are dispersed.

\_\_\_\_\_ A model needs to look exactly the same as something in the real world.

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Reading *Investigating Seeds*

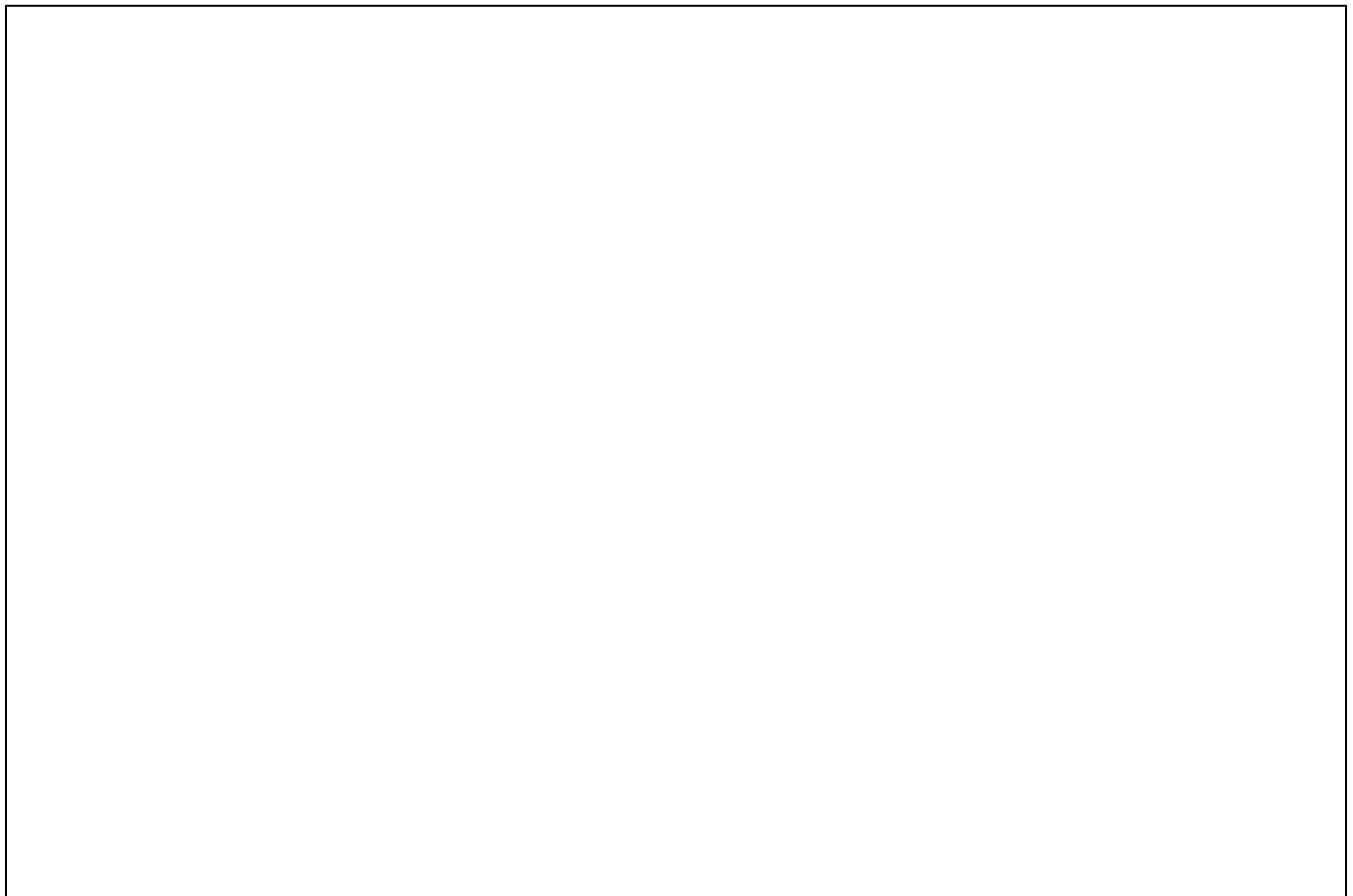
Directions:

1. Set a purpose for reading *Investigating Seeds*.
2. Read the book.
3. In the box below, draw a picture to show how the friends used a model to investigate how seeds get dispersed.
4. Label your drawing.

My purpose for reading is to \_\_\_\_\_

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Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Reading Reflection: *Investigating Seeds*

What did the friends in the book measure in their investigation?

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Return to page 20 in *Investigating Seeds* and review the data that the friends collected. What did the friends learn in their investigation?

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Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Daily Written Reflection

In *Investigating Seeds*, you read that burclover seeds can be carried by fur. Do you think a chalta seed could be carried by fur? Why or why not?

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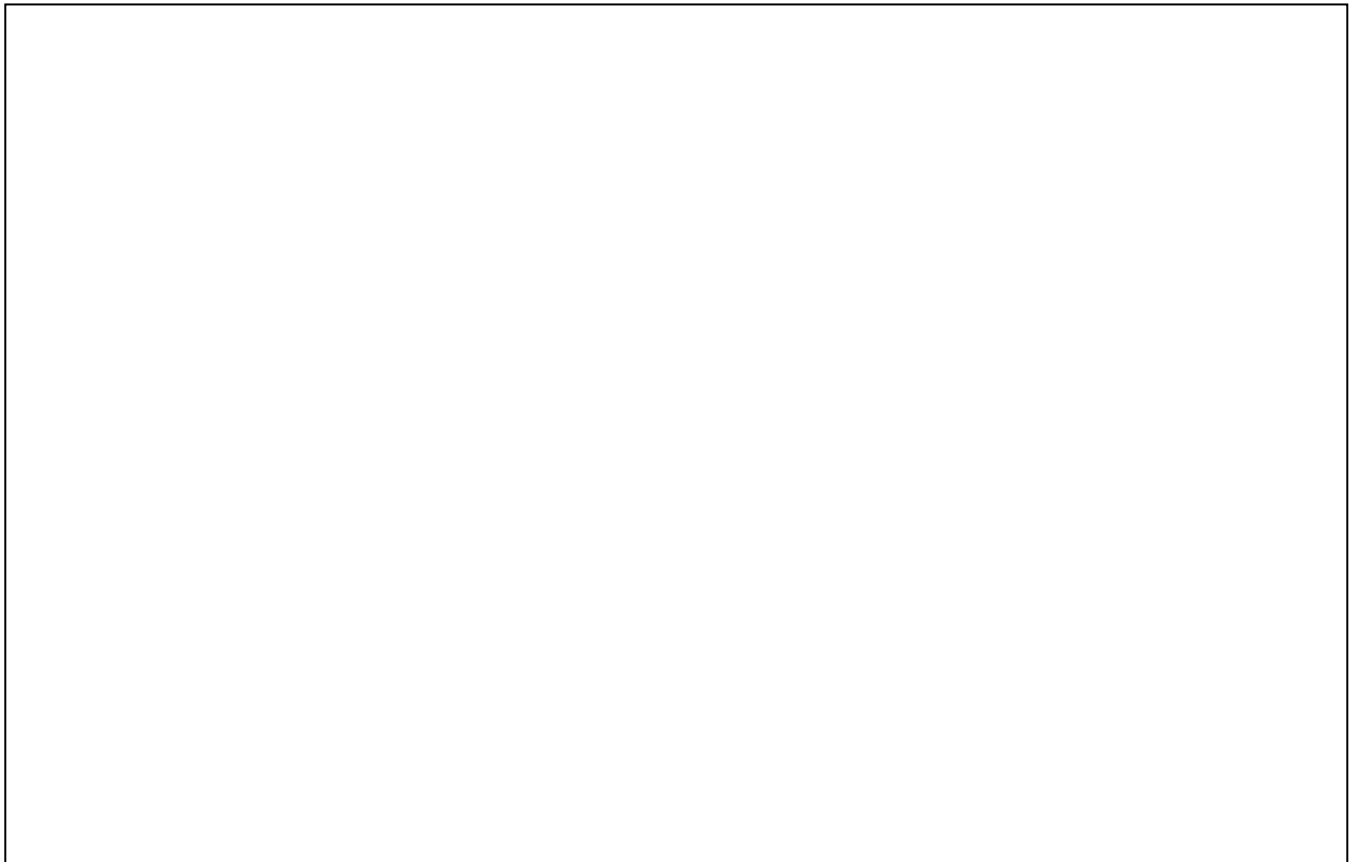
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Make a drawing if it helps you explain your thinking. Label your drawing.



Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Fluffy Seed Investigation: Planning How to Measure

Directions:

1. Read the question for investigating.
2. Write your purpose for investigating by completing the sentence below.
3. Decide how you will measure to answer your question. Circle one response below for how you will measure.

**My question is:** Does a seed move farther in the wind with fluffy parts or without fluffy parts?

My purpose for investigating is to \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

How will you measure? Circle one response below.

We will measure how far the seeds move.

We will measure by counting how many seeds move.

We will measure how big the seeds are.

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Daily Written Reflection

Why do you think scientists do more than one test when they investigate?

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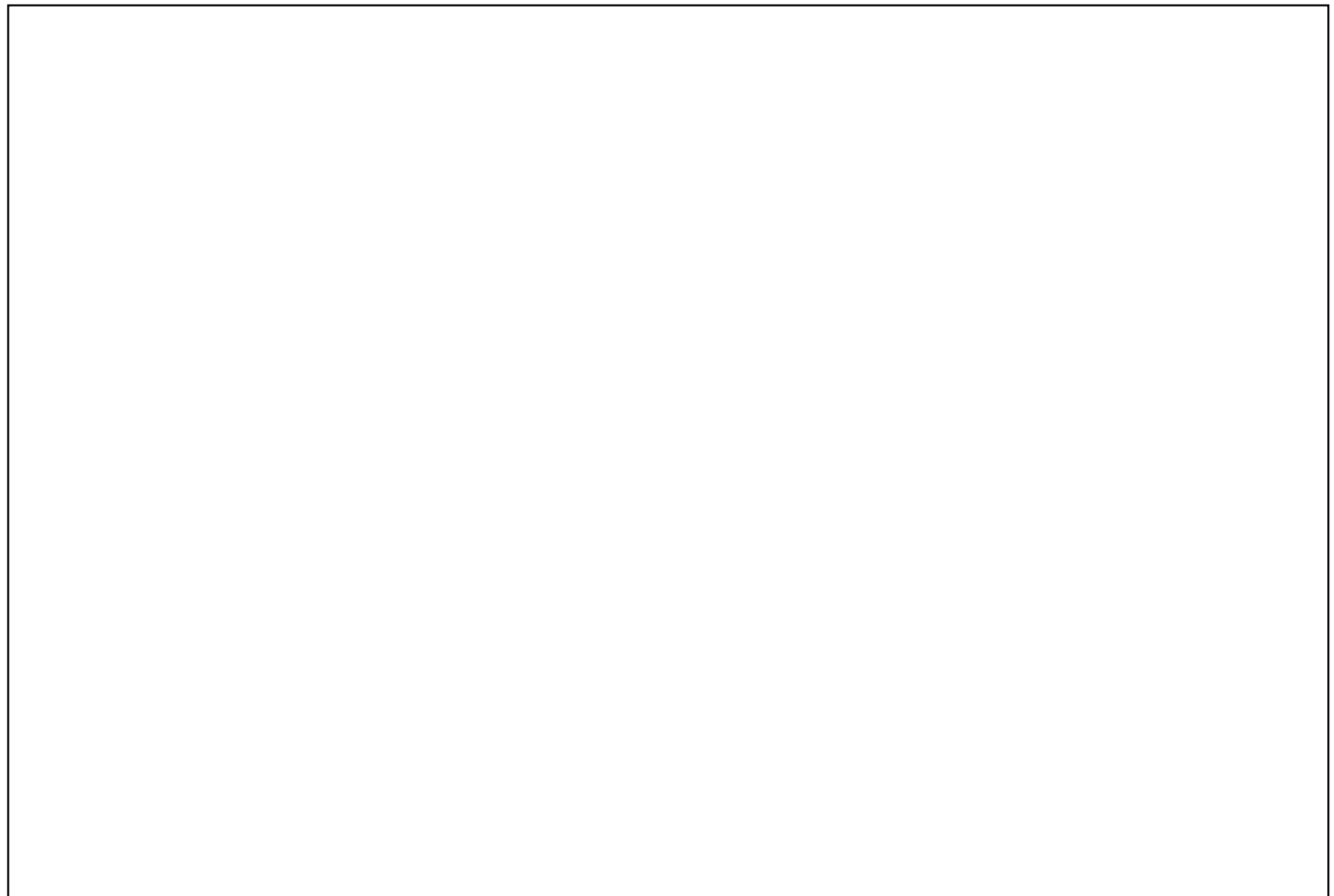
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Make a drawing if it helps you explain your thinking. Label your drawing.



Name: \_\_\_\_\_ Date: \_\_\_\_\_

**You can use this page to write notes or make drawings.**

## Propeller Seed Investigation

Directions:

1. Test six seed models with propellers.
2. In the table below, write "Yes" if the seed moved away from the fan. Write "No" if it did not.
3. Test six seed models without propellers.
4. In the table on the next page, write "Yes" if the seed moved away from the fan. Write "No" if it did not.
5. Answer the questions on the next page.

**Seeds with Propellers**

Test	Did the seed move?
1	
2	
3	
4	
5	
6	



## Propeller Seed Investigation (continued)

### Seeds without Propellers

Test	Did the seed move?
1	
2	
3	
4	
5	
6	

How many seeds with propellers moved away from the fan? \_\_\_\_\_

How many seeds without propellers moved away from the fan? \_\_\_\_\_

## Fluffy Seed Investigation

Directions:

1. Test your seed with fluffy parts six times. Record your data in the table below.
2. Test your seed without fluffy parts six times. Record your data in the table on the next page.

### Seeds with Fluffy Parts

Test	How far did the seed move?
1	
2	
3	
4	
5	
6	

## Fluffy Seed Investigation (continued)

### Seeds without Fluffy Parts

Test	How far did the seed move?
1	
2	
3	
4	
5	
6	

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Writing a Scientific Explanation

Directions:

1. Complete the topic sentence that answers the question.
2. Write supporting ideas.

**Question:** How are other seeds in the Bengal Tiger Reserve able to get to places where they can grow?

Other seeds in the Bengal Tiger Reserve are able to get to places where they can grow because \_\_\_\_\_

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Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Daily Written Reflection

What is the most interesting thing you have learned about plants and their habitats? Why?

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Make a drawing if it helps you explain your thinking. Label your drawing.



Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Chapter 4: Check Your Understanding

This is a chance for you to reflect on your learning so far. This is not a test. Be open and truthful when you respond.

Scientists investigate in order to figure out how things work. Am I getting closer to figuring out why new trees might not be growing in a habitat?

I understand that scientists use different ways to study the world.

\_\_\_\_ Yes    \_\_\_\_ Not yet

I understand where new chalta trees come from.

\_\_\_\_ Yes    \_\_\_\_ Not yet

I understand what chalta seeds need to grow into full-grown trees.

\_\_\_\_ Yes    \_\_\_\_ Not yet

I understand how chalta seeds get the things they need to grow into full-grown trees.

\_\_\_\_ Yes    \_\_\_\_ Not yet

I understand how the parts of the broadleaf forest habitat depend on each other.

\_\_\_\_ Yes    \_\_\_\_ Not yet

I think I understand or don't yet understand these ideas because

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What are you still wondering about the plants in the Bengal Tiger Reserve?

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## Glossary

**data:** observations or measurements recorded in an investigation

**datos:** observaciones o mediciones apuntadas en una investigación

**disperse:** to spread around

**dispersar:** poner todo alrededor

**evidence:** information that supports an answer to a question

**evidencia:** información que respalda una respuesta a una pregunta

**explanation:** a description of how something works or why something happens

**explicación:** una descripción de cómo algo funciona o por qué algo pasa

**habitat:** the place where an animal or plant lives and gets what it needs

**hábitat:** el lugar donde un animal o una planta vive y obtiene lo que necesita

**investigate:** to try to learn more about something

**investigar:** intentar aprender más acerca de algo

**leaves:** the flat, green plant parts that use light to help the plant grow

**hojas:** las partes planas y verdes de una planta que usan la luz para ayudar a la planta a crecer

**measure:** to use a tool to find out information such as how heavy, how big, how fast, or how hot or cold something is

**medir:** usar un instrumento para averiguar información tal como qué tan pesado, qué tan grande, qué tan rápido o qué tan caliente o frío es algo

**model:** something scientists make to answer questions about the real world

**modelo:** algo que los científicos crean para responder preguntas sobre el mundo real

## Glossary (continued)

**observe:** to use any of the five senses to gather information about something

**observar:** usar cualquiera de los cinco sentidos para recolectar información sobre algo

**roots:** the underground plant parts that take in water to help the plant grow

**raíces:** las partes bajo tierra de una planta que absorben agua para ayudar a la planta a crecer

**seeds:** things a plant makes that can grow into new plants

**semillas:** cosas que genera una planta que pueden crecer y convertirse en plantas nuevas

**sprout:** to start to grow from a seed

**germinar:** comenzar a crecer de una semilla

**system:** a group of parts that work together

**sistema:** un grupo de partes que trabajan juntas







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# Your Investigation Notebook

Scientists use notebooks to keep track of their investigations. They record things they learn from other scientists. Sometimes they draw or make diagrams. They record ideas and information they want to remember.

Your Investigation Notebook is a place for you to keep track of:

- investigations you do in class.
- what you learn from reading science books.
- your questions, predictions, and observations.
- your explanations and the evidence you find to support those explanations.
- your ideas!



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