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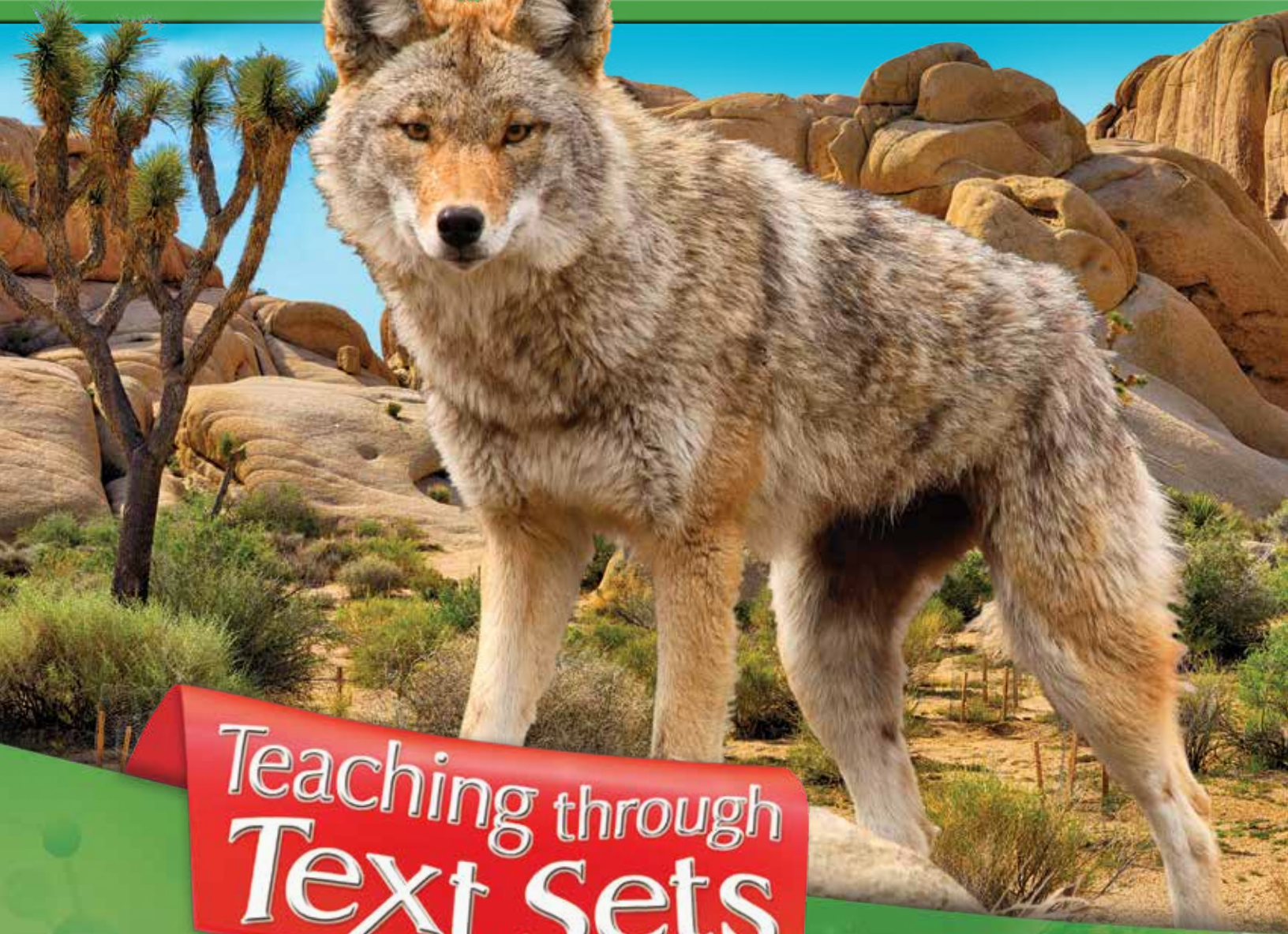
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com•plex (KOM-pleks) adjective: having parts that c
ability to read and write complicated ways

lit•er•a•cy (lit-er-ah-si) noun
au•then•tic (aw-THEN-tik) adjective



Teaching through
Text Sets

How Plants and
Animals Survive
Teacher's Guide

Teacher Created Materials
PUBLISHING

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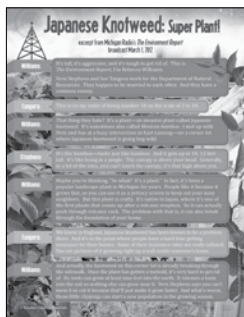
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Text Set Chart

Text (Instructional Setting)	Text Title	Key Content	Text Type	Modalities	Lexile® Measure
Introductory Text—1 copy (read aloud to students)	<i>Hive Mind</i>	Students at Sci Hi study colony collapse disorder, which is killing millions of bees around the world.	Science fiction, chapter book	Print	n/a
Anchor Text—24 copies (whole-class reading)	<i>Bug Builders</i>	An up-close look at complex structures built by some of the smallest creatures on Earth	Nonfiction book	Print, audio, Interactiv-eBook	710L
Supporting Text 1—6 copies (teacher-guided close reading)	<i>Japanese Knotweed: Super Plant!</i>	Radio broadcast about Japanese knotweed, an invasive plant	Primary source	Print, audio	890L
Supporting Text 2—6 copies (independent and small-group close reading)	<i>Junior Ranger Checklist</i>	Official program and activity booklet from Joshua Tree National Park	Primary source	Print	n/a
Supporting Text 3—6 copies (small-group reading)	<i>Big Brains</i>	Infographic about brain size and intelligence	Nonfiction text card	Print	790L
Extension Text—6 copies (heterogeneous small-group reading)	<i>Surviving the Wild Backyard</i>	Six siblings look to the internal and external structures of plants and animals for inspiration after accidentally shrinking themselves to a bug-like size.	Reader's theater, fiction	Print, audio	640L–750L

Supporting Text 1—Second Reading: Teacher-Guided



Before Reading

1. Discuss the main idea of the text, along with students' first impressions and questions from the previous lesson. Write students' questions on the board.
2. Explain to students that they will hear the text read aloud twice. First, you will play the audio recording straight through. Second, you will read the text aloud and will talk about what you are thinking as you read.

During Reading

1. Distribute *Japanese Knotweed: Super Plant!* to students. Play the audio recording straight through as students follow along.
2. Read the text aloud a second time. Think aloud about the following points:
 - A 10 on a scale of 1 to 10 implies that this problem is more important than others.
 - Insurance is a protection plan. You pay money to an insurance company every month. If something bad happens, the insurance company helps pay for repairs. If there is a good chance that something bad will happen, the insurance plan costs more.
 - An herbicide is poisonous and will destroy plants.
 - *Prohibited* means "banned" or "not allowed."
 - Since Japanese knotweed has spread to other cities in Michigan, I wonder if other states are also affected.
3. Review the questions that were written on the board in the Before Reading section. Discuss possible answers.

After Reading

1. Distribute copies of the *Text-Dependent Questions* activity sheet (page 23) to students. Tell students that they will discuss the questions on the activity sheet in small groups. Remind students to support their responses by accurately quoting evidence from the text.
2. Allow time for students to collaborate as they reference the text to answer questions. Discuss student responses as a class.
 - ◆ Challenge **above-level learners** to research the legality of Japanese knotweed in their own state.
3. Have students list new ideas or information from this text and the activity on the *Essential Question* activity sheet (page 17).



Progress Check: During Step 2, watch for students referring to details and examples in the text when explaining what the text says explicitly and when drawing inferences from the text.

Standards

• Reading:

Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.

• Writing:

Draw evidence from literary or informational texts to support analysis, reflection, and research.

• Content:

Understand that plants and animals have both internal and external structures that serve various functions in growth, survival, behavior, and reproduction.

• Language:

Communicate information, ideas, and concepts necessary for academic success in the area of Science.

Text-Dependent Questions

Name: _____

Date: _____

Directions: Answer the questions below. Use evidence from the text to support your answers.

1. What is the date of this broadcast, and where was it made?

2. What is the tone or mood of this broadcast? How do you know?

3. Why did the reporter choose to use the word *aggressive* to describe Japanese knotweed?

4. According to the text, what structures of the plant ensure its survival?

5. Write a question to Rebecca Williams that is left unanswered by this broadcast.

Assessment Overview

Standards

- **Reading:** Integrate information from two texts on the same topic in order to write or speak about the subject knowledgeably.
- **Writing:** Produce clear and coherent writing in which the development and organization are appropriate to task, purpose, and audience.
- **Content:** Understand that plants and animals have both internal and external structures that serve various functions in growth, survival, behavior, and reproduction.
- **Language:** Communicate information, ideas, and concepts necessary for academic success in the area of Science.

Materials

- texts listed in the *Text Set Chart* (page 14)
- copies of the *Rubrics* (pages 35–37)
- students' completed activity sheets (pages 32–34)
- model-building supplies, such as clay, cardboard, and recycled material
- construction paper
- coloring supplies, such as markers, crayons, or colored pencils
- computers (optional)

Project Options

- Survival Model
- Survival Guide
- Argumentative Essay

Procedure

The following steps can be spread out over several days.

1. Explain to students that they will complete a project that will show what they have learned about plant and animal survival by answering the Essential Question—*How do internal and external structures support the survival of living things?*
2. Briefly introduce each project by reading aloud the directions. Answer any questions students may have. You may choose to conduct mini lessons on any writing forms that are unfamiliar to students. Ask students to choose a project from the Project Options list.
 - Students who choose the Survival Model or the Survival Guide projects may work in small groups.
 - Students who choose the Argumentative Essay project should work independently.
 - ◆ You may choose to have **below-level learners** and **English language learners** work with other students who are completing the same project.
3. Distribute copies of the appropriate rubrics (pages 35–37) to students. Explain each rubric so that students understand what is expected of them.
4. Distribute copies of the appropriate student activity sheets (pages 32–34) to students. Remind students to use information from the previous activity sheets and the text set to help them. Allow time for students to complete the activity sheets.
5. Distribute materials to students as needed. Allow time for students to complete their projects.
6. Have students present their projects to the class.



Japanese Knotweed: Super Plant!

excerpt from Michigan Radio's *The Environment Report*
broadcast March 1, 2012

Williams:

It's tall, it's aggressive, and it's tough to get rid of. This is *The Environment Report*, I'm Rebecca Williams.

Vern Stephens and Sue Tangora work for the Department of Natural Resources. They happen to be married to each other. And they have a common enemy.

Tangora:

This is on my radar of being number 10 on the scale of 1 to 10.

Williams:

That thing they hate? It's a plant—an invasive plant called *Japanese knotweed*. It's sometimes also called *Mexican bamboo*. I met up with Vern and Sue at a busy intersection in East Lansing—on a corner lot where Japanese knotweed is going hog wild.

Stephens:

It's like bamboo—looks just like bamboo. And it gets up to 10, 12 feet tall. It's like being in a jungle. The canopy is above your head. Generally, in a lot of the sites, you can't touch the canopy; it's that high above you.

Williams:

Maybe you're thinking, "So what? It's a plant." In fact, it's been a popular landscape plant in Michigan for years. People like it because it grows fast, so you can use it as a privacy screen to keep out your nosy neighbors. But this plant is crafty. It's native to Japan, where it's one of the first plants that comes up after a volcanic eruption. So it can actually push through volcanic rock. The problem with that is, it can also break through the foundation of your home.

Tangora:

We know in England, Japanese knotweed has been known to be a problem there. And it's to the point where people have a hard time getting insurance for their homes. Some of their insurance rates are really inflated. You see pictures of it growing right up a wall inside someone's home.

Williams:

And actually, the knotweed on this corner lot is already breaking through the sidewalk. Once the plant has gotten a toehold, it's very hard to get rid of. Its roots can grow at least nine feet into the earth. It releases a toxin into the soil so nothing else can grow near it. Vern Stephens says you can't mow it or cut it because that'll just make it grow faster. And what's worse, those little clippings can start a new population in the growing season.

Williams:

Vern says the only way to treat it right now is with very specific herbicides. He says if you use the wrong herbicide, you could make knotweed grow even faster. It can take years to get rid of it.

In 2005, the Michigan legislature made Japanese knotweed a prohibited species. Sue Tangora says you're not required to treat it if you already have it, but you can't share it.

Tangora:

It's illegal to sell it at a nursery or farm market or anywhere. People will dig it up and share it with their friends or neighbors, so unless you're really aware of all the laws in Michigan, you may not be aware that's actually illegal to do.

Williams:

It's even illegal to move soil that has the roots of Japanese knotweed in it because that could spread the plant. And that's caused problems for the guy who owns this corner lot. Vern Stephens says the landowner wanted to develop the site, but now he can't build here until all the Japanese knotweed is gone.

Stephens:

He won't be able to do anything on this until it's cleaned up. I'm guessing three years minimum.

Williams:

The DNR's still trying to figure out how widespread knotweed is, but it's been found throughout the state, especially in cities such as Flint, Detroit, and Petoskey.

Al Hansen is the director of Parks and Recreation for the city of Petoskey. He says they've been struggling with knotweed in city parks for about three years. He says they're treating knotweed on city land, but they're having trouble getting some private landowners to see knotweed as a problem.

Hansen:

They don't realize the consequences when it escapes the landscape beds themselves. And that's the difficult part because they were able to buy it at one time; and therefore, they don't view that as being invasive.

Williams:

And that is maybe the biggest problem for officials. It can be hard to get people fired up about plants, especially when it's something that everybody thought was good. I'm Rebecca Williams.

Source: Audio recording and transcript provided under license from Listen Current.