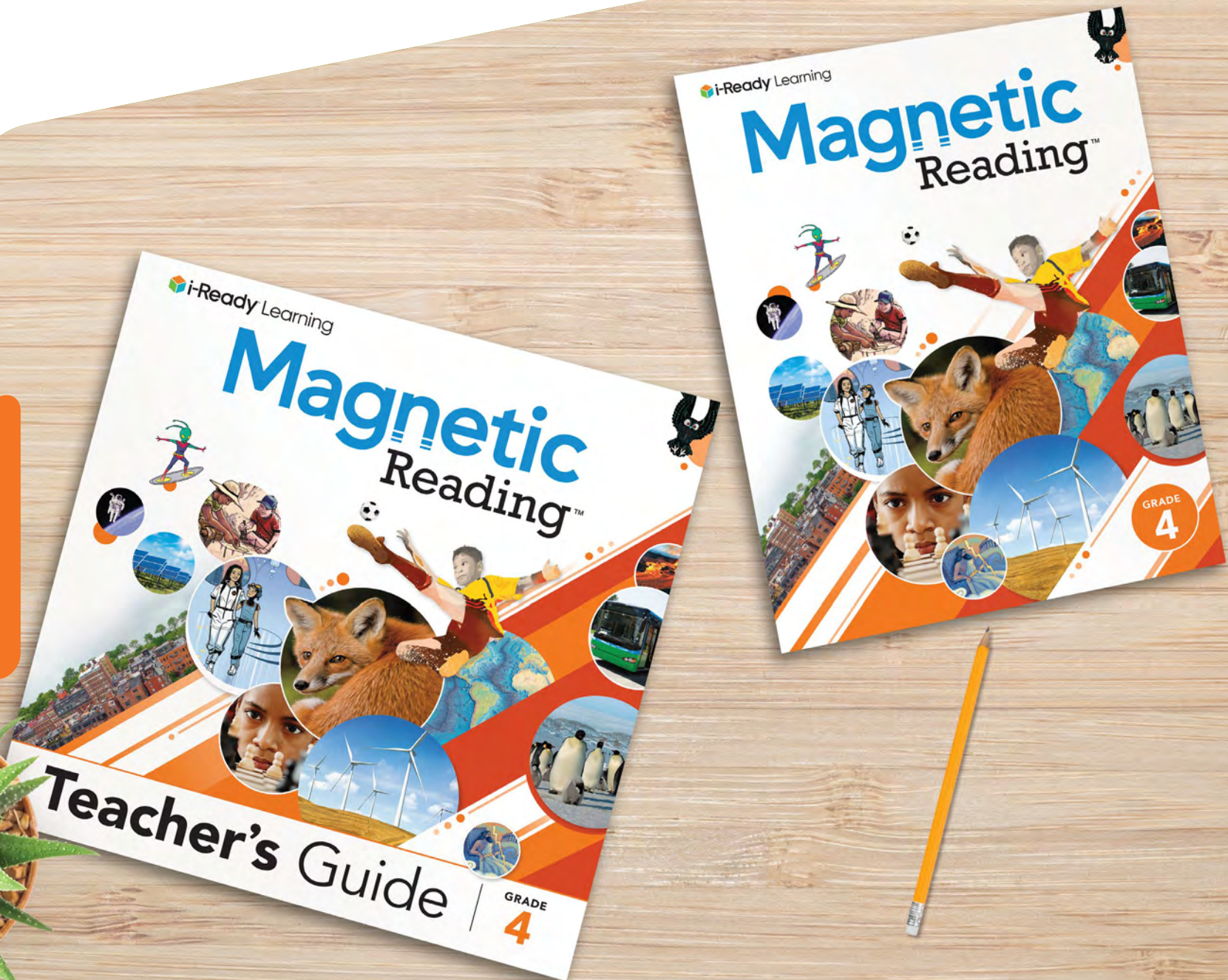


i-Ready Learning

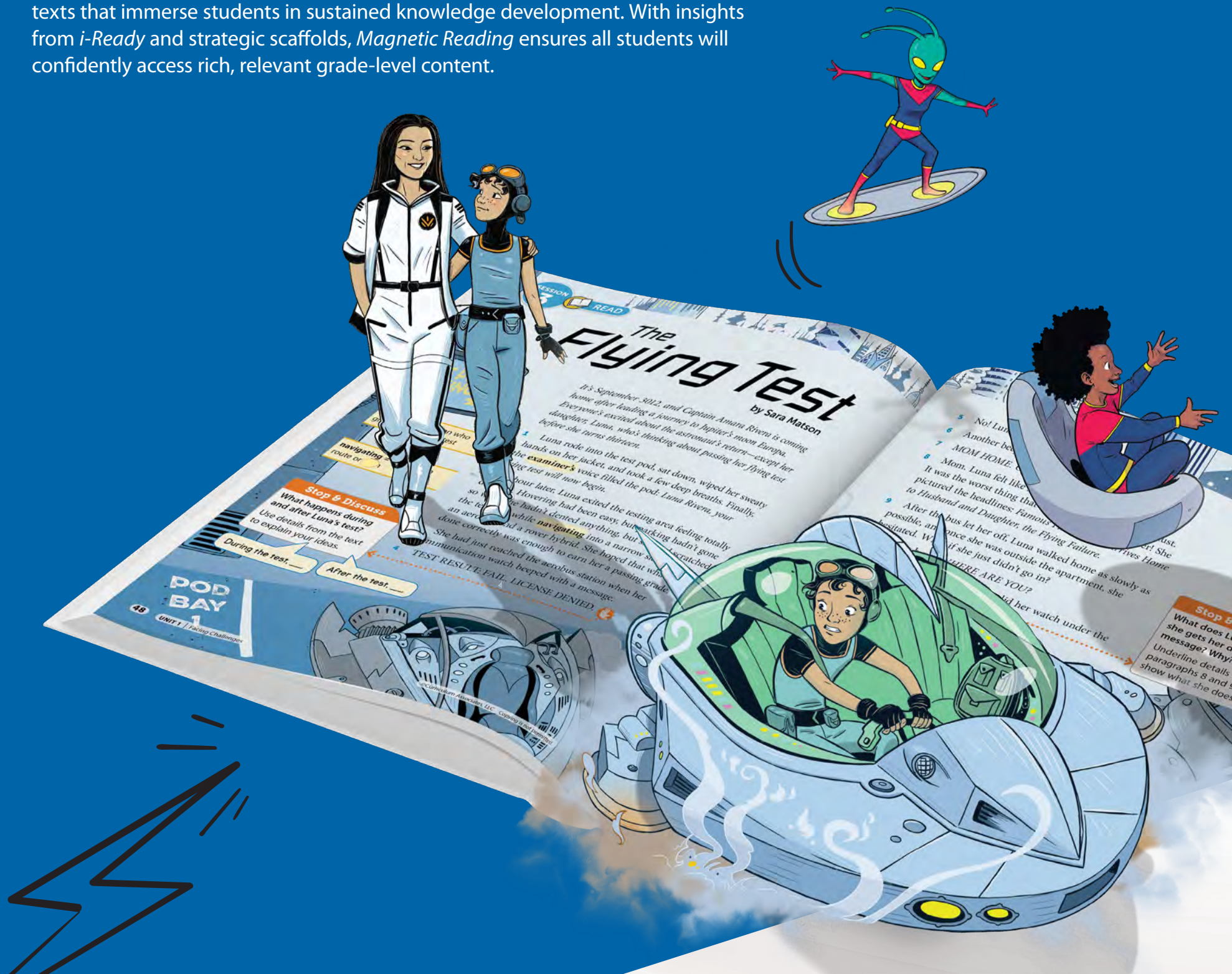
Magnetic Reading™

Grade 4 Sampler



What Makes This Program So Magnetic?

Magnetic Reading is a reading comprehension program that draws all students to the center of learning. The program presents compelling, culturally relevant texts that immerse students in sustained knowledge development. With insights from *i-Ready* and strategic scaffolds, *Magnetic Reading* ensures all students will confidently access rich, relevant grade-level content.



What's in This Sampler?

This sampler provides a high-level overview of *Magnetic Reading*. In addition, it contains a complete sample of both the Teacher's Guide and the Student Book for Unit 6, Lesson 19.

Program Overview. 2

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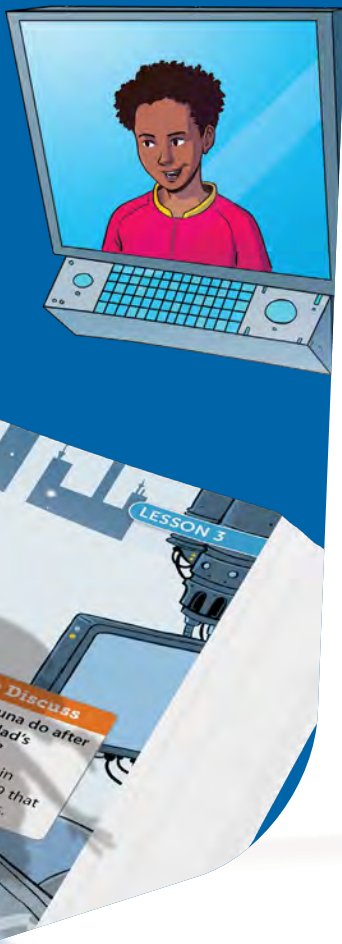
Program Components. 20

Magnetic Reading Grade 4 Sample Content 25

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Student Book Sample 32

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Program Overview

The Pillars of *Magnetic Reading's* Instructional Design



Knowledge-Rich Learning

A content-rich curriculum encourages students to build a store of knowledge and vocabulary they can activate when reading future texts.

Rainforest's Hidden Cities
Bryn Hulick

rainforests of northern Guatemala hide a secret: of ancient cities stretch across the forest floor. Temples, palaces, and roads built more than a thousand years ago tell the story of a large **empire** that once spread across Central America and Mexico. Some of the tallest trees. But thick forest has hidden the past.

ruins = wh something

empire =



Culturally and Linguistically Responsive Pedagogy

Culturally and Linguistically Responsive teaching and texts validate and affirm diverse backgrounds and perspectives so all students may see themselves as part of a rich, thriving community of cultures and ideas.

SESSION 5 READ LESSON 12

A Storm on the Horizon

by Odia Wood-Krueger

SESSION 5 READ LESSON 4

The Hula-Hoopin' Queen

PART 3

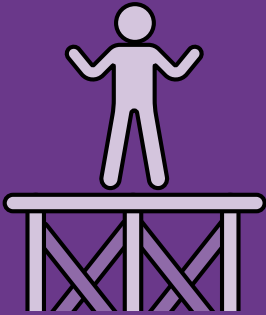
by Thelma Lynne Godin • Illustrated by Vanessa Brantley-Newton

- 1 In the kitchen I set a chocolate doughnut on a pretty plate. I add whipped cream and strawberries. As I carry the doughnut cake to Miz Adeline, Mama starts singing "Happy Birthday," and everyone joins in.
- 2 "Why, this is just about perfect," Miz Adeline says, taking a bite of her doughnut birthday cake. "Now, Kameeka, did you say you were hoopin'? When I was a girl, I was the best Hula-Hooper on this block."
- 3 "Adeline, don't you start that nonsense," Miss Evelyn says. "You know very well I was the best."
- 4 "Baby girl, why don't you bring some hoops on in here and let me show this old girl what she forgot."
- 5 My eyes find Mama's. She shakes her head. But Miz Adeline's already pushing back chairs to make room. Then she slips a hoop over her head.
- 6 And right then I know. Miz Adeline's

Takoja = grandchild

bluff = a hill with sharp slope

LESSON 12 | On the Move 233



Scaffolds to Support Learner Variability

Built on the principles of the Universal Design for Learning, *Magnetic Reading* opens access for all students to engage with high-quality, grade-level texts.

Supporting Students to Read Complex Texts

The ability to read and analyze complex texts is key to students' success in the classroom and beyond. *Magnetic Reading* supports students to read more so they become informed readers capable of recognizing others' perspectives and enriching their own.

- Scaffolds woven throughout reading sessions support students to engage with grade-level texts.
- Scaffolds during practice sessions support students to unpack the text's ideas, structure, and perspectives to arrive at a deeper understanding.

Young Voices

LESSON 3

3 Support Reading

- Have students read paragraphs 5–11.
- **CHECK IN** Students understand that the reference to eating "a pound of moon dust" describes how Luna feels.

HELP & GO: Language

- Read paragraph 8 aloud. **Ask**, How do you think it would feel to eat "a pound of moon dust"? Point out that emotions are connected to physical feelings. **Ask**, What emotions have you had that make your stomach feel like this?

4 Stop & Discuss

- Have students **Turn and Talk** to complete the **Stop & Discuss**.
- **LOOK FOR** Students underline that Luna imagines headlines, walks slowly, and hesitates; she doesn't want to tell her parents she failed.

HELP & GO: Comprehension



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Data to Inform Instruction

i-Ready lesson-level data and reporting give teachers valuable strategies for individual students, groups, and impactful pairings.

Unit 1: Lesson 1: It's a Mystery

Text Scaffolding

Use this area to have all students read grade-level texts during Sessions 1, 3, and 5 of this lesson.

Focus Question:

What skills can people use to solve a mystery?

Knowledge Building:

Lesson texts build knowledge about:

- The benefits that can come from asking questions and researching
- The importance of using logic and evidence to reach a conclusion
- The danger of jumping to conclusions

Text	Background Knowledge Demands	Lexile® Text Measure
<i>The Lost Medals</i>	View	660L
<i>The Glitter Trap</i>	View	670L
<i>The Case of the Missing Plant</i>	View	620L

Reading Buddies

(Students Included/Total)

Paired Reading Teach



22 Students 3 S

All Reading Bud

Skill Scaffolding

Consider using these resources ahead of teaching the comprehension skill in Sessions 2 and 4 of the lesson.

Focus Standard:

RL.4.2 Summarize the text.

Ready to Go

12 Students

Students are ready to summarize a story.

✓ Ready to Go

Background Knowledge Demands

Community Yard Sales

In this story, two brothers visit a yard sale. As needed, share the following with students:

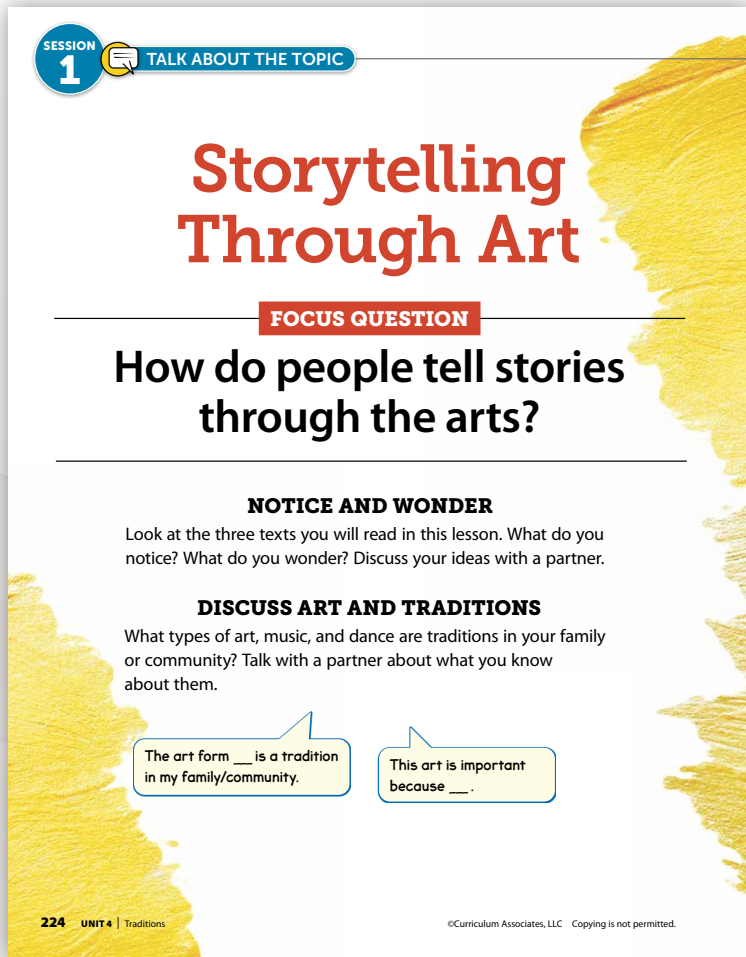
- A yard sale is when a person or family sells items they own that they no longer need or want.
- This event is also sometimes known as a tag sale, stoop sale, rummage sale, or garage sale.
- A community yard sale is when multiple neighbors come to sell items at the same time. Because there is greater demand for sale, this can sometimes bring in more money than a yard sale hosted by one seller.



Pillar 1: Knowledge-Rich Learning

Drawing Together Ideas to Build Knowledge

All texts in *Magnetic Reading* build systematically so students create stores of knowledge that open doors to deeper learning, exploration, and knowledge.



Continuous Knowledge Development

Focus Questions guide knowledge building throughout each lesson and provide an overarching anchor question from text to text.

Building Knowledge across Content Areas

Texts include content from a wide range of topics including social studies, science, and the arts.

SESSION 3 READ



Follow Those Whales!

by Mary Lindeen

graceful = moving smoothly and easily


Stop & Discuss
Why is tracking helpful to scientists who study whales?
Discuss the details from the text that support your response.

Tracking helps scientists learn ____
They use that information to ____

- Whales are amazing creatures. They are beautiful and **graceful**, and they are a necessary part of the ocean's food web. Without whales, entire ocean habitats could be in trouble.
- Scientists like Grace Russell study whales to learn how to protect them. One way to do this is to follow the whales as they move around the ocean. This is called tracking. Tracking can help scientists know what whales need to survive. It tells them where whales go to eat, escape danger, have babies, and more. Scientists can track whales from land, from the water, or from the air.

140 UNIT 2 | Ocean Survival ©Curriculum Associates, LLC Copying is not permitted.

SESSION 5 READ



Saving Sea Turtles


by Zeke Shepherd

Sea turtles have called "the law of the ocean."

clever = useful

role = job


- A sea turtle swims underwater. It is looking for food. Suddenly, a fishing boat passes. It is dragging a net. The people on board are fishing for shrimp, but their net accidentally captures the turtle, too. The sea turtle can't breathe underwater. It will drown if it can't get to the surface. It's a good thing the net has a turtle excluder device (TED). This **clever** piece of equipment has bars that stop the turtle from going too far inside the net. The device also has an escape hatch. The turtle finds the opening and swims to freedom.
- Sea turtles play an important **role** in the ocean. Some sea turtles munch on seagrass. They keep it trimmed and healthy. Other sea turtles eat ocean animals called sponges. This prevents sponges from taking over coral reefs and forcing other creatures out. Many animals depend on seagrass and coral reef habitats. Sea turtles' actions help these animals survive.



The bars turtles see net and escape

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SESSION 1 READ



The Cherry Blossoms of High Street Part 1

by Nandini Bajpai

Bhaiya = older brother

Stop & Discuss
Why is Jiya upset?
Discuss with a partner.

- My older brother was waiting for me when I got off the bus, like he did every day after school. But on our chilly walk home, something was different. The cherry blossom trees along our street had bright yellow tape tied around them, the loose ends flapping in the wind.
- "Samar **Bhaiya**," I said to my brother, "what's the tape for?"
- Samar made a whirring sound, like an electric saw. "The city marked the trees they're going to cut down," he said. "Then they're going to widen High Street."
- My heart pounded. "What? That's horrible!"
- "But look at the traffic, Jiya," he said, pointing at the long line of cars waiting at the stop light. "The bus takes forever. It'll be faster when the street has another lane."
- "Couldn't they widen a different road?"
- Samar shrugged. "It's not a big deal."
- But it was a big deal. Even in the winter, the trees on High Street stood graceful and tall, holding up their bare branches like friends waving hello. When we moved to Michigan from India, I missed my friends. I also missed the *kachnar* trees near our old home in Delhi. They were covered in pink flowers every spring. My first spring in Michigan, seeing the pink cherry blossoms made me feel better. They were so much like the *kachnar* flowers.

380 UNIT 6 | Artful Ideas ©Curriculum Associates, LLC Copying is not permitted.

Creating Compassionate Classrooms

Students build empathy and awareness while reading and discussing *Magnetic Reading's* rich and diverse fiction.

Research-Backed Partnership with Knowledge-Building Experts



Research suggests that reading proficiency is connected to students' prior knowledge, and a content-rich curriculum can improve student learning. We teamed up with the Johns Hopkins Institute for Education Policy to ensure that each *Magnetic Reading* unit comprised texts that effectively build knowledge in critical areas.

Integrating Vocabulary to Build Knowledge

Wide vocabulary leads to better reading comprehension. *Magnetic Reading* integrates word learning into reading, writing, and discussion.

SESSION 1 TALK ABOUT THE TOPIC

Exploring Extremes

FOCUS QUESTION

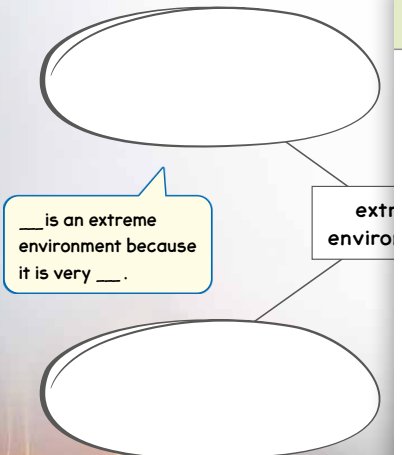
How and why do people explore extreme environments?

NOTICE AND WONDER

Look at the four texts you will read in this lesson. What do you notice? What do you wonder? Discuss your ideas with a partner.

CONCEPT WEB

What makes a place an *extreme* environment? Fill in the bubbles with words that describe extreme environments or examples of extreme environments.



New Words in Real-World Conversations

Magnetic Reading provides ample opportunities to learn new, conceptually connected words. Students experience multiple exposures across lessons and throughout each thematic unit. Students practice vocabulary through academic discussions and writing activities.

LESSON 9

Talk

Look back at the chart. Choose one word and discuss with your partner how the word is connected to volunteering.

The word ___ is connected to volunteering because volunteers ___.

Write

What do volunteers do? Why is their work important? Use two words from the chart in your response.

WRITING CHECKLIST

- I included details to support my response.
- I used two words from the chart.
- I used complete sentences.
- I used correct spelling, punctuation, and capitalization.

Good Reading Produces Good Writing

Students apply concept vocabulary through rigorous speaking and writing tasks.

CALLING ALL VOLUNTEERS

by Jacqueline Adams



Cleaning the beach helps protect ocean life.

leisure = free time

citizen = a person who lives in a town or city

Stop & Discuss

How do the students make their community better?

Underline details that explain what the students do.

1 One spring day, 1,300 students met at a beach in California. They had come from 15 different elementary schools. They didn't arrive in swimsuits, ready for a day of **leisure**, however. Instead, they pulled on rubber gloves and got ready to collect trash.

2 These kids had learned that trash is a huge problem for oceans. Fish and other animals can swallow the trash and get sick. Plus, a beach full of garbage is no fun for the people of the community. So, the students offered to help by volunteering to clean up the beach. They worked hard for hours, picking up large items like plastic bottles. They also searched through the sand for bottle caps, straws, and other tiny pieces of litter.

3 Like the students at the beach, many people want to find solutions to problems they see in their community. When people work on a problem together, they can make a big impact. The beach volunteers filled 23 garbage bags in just that one day! That's part of being a good **citizen**—helping to make your community a better place.

4 Good citizens care about the place where they live and the people who live there. When people help make their community a better place, they show respect for others and their community. For example, they don't toss trash on a beach.

Point-of-Use Support

Embedded definitions support fluent reading and allow students to access ideas.

Help & Go

Scaffolds guide students to use morphology and context clues to determine word meanings, building knowledge of domain-specific and Tier 2 words encountered broadly across content areas.

LESSON 6

3 Support Reading

- Have students read paragraphs 3–5.
- CHECK IN** Students understand vocabulary that describes the moon.

HELP & GO: Vocabulary

- Direct students to paragraph 3. **Ask**, *Where is a lunar rover used? on the moon. What do you think lunar means? related to the moon.*
- Revisit paragraph 4. Point out that the temperature range -208°F to 250°F (-133°C to 121°C) helps explain what extreme temperatures means. **Ask**, *What is another way to describe extreme temperatures? very hot or very cold.*
- Have students visualize the moon's uneven landscape and boulders. **Ask**, *What is the surface of the moon like? bumpy, lots of big rocks.*
- Encourage students to identify cognates of unfamiliar words in their home language. The Spanish cognates *lunar*, *vehículo*, *extremo/a*, and *temperatura* may support understanding of words in these paragraphs. **EL**

Beanbag-like wheels help a lunar rover travel over the moon's surface.

4 Stop & Discuss

Why does a lunar rover need special wheels? Support your response with details from the text.

The special wheels help the lunar rover _____

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LESSON 6 | Invention Upgrades 105

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Discuss the Whole Text

- Revisit the Focus Question with the class. **Ask**, *What technology did the two groups build on? How does each upgrade build on others' ideas?*
- Have students **Stand and Share** their responses. Record responses for students to reference later.





Pillar 2:

Culturally and Linguistically Responsive Pedagogy



Compelling Content That Draws Students into Reading

Magnetic Reading gives students the opportunity to:

✔ Bring themselves to the text culturally and linguistically

✔ Connect ideas from the texts to what they know and have experienced in their own lives

✔ Share their cultures and home languages, providing classmates with a window into the wide range of backgrounds and experiences with which they may be unfamiliar




Authentic Voices, Stories, and Perspectives

Informational and literary texts mirror many cultural backgrounds and experiences. Students share their cultures and home languages, providing other students with a window into cultures and experiences that may be unfamiliar. Students learn more about themselves, their classmates, and people they have yet to meet.

READ

Teen Inventor Captures the SUN

by Alice Cary



1 Wouldn't you love a good excuse to skip your chores? Not Kelly Charley. Living with her mother and sister on her grandparents' farm in Arizona, she willingly helped with many different tasks. One of her most important jobs was heating her family's home.

2 Most winter evenings at about five o'clock, Kelly went outside to chop wood and load the pieces into a wagon. She also filled a bucket with coal and then carried the wood and coal inside. It was hard but necessary work, because her family used this fuel to heat their home.

3 When Kelly was about to enter high school, she began to worry. The school was 90 minutes away from her home, making it too far to travel each day. She would need to board at school during the week. But who, she wondered, would bring in the fuel each evening while she was away? Not only were coal and wood heavy, but when supplies got low her family had to drive more than 100 miles to get more. She hated the idea of her grandparents having to take over her chores.

CONNECT IT

4 Even though finding heating fuel each day was a lot of work, Kelly's family had no choice. Their home, like one-third of the homes in the Navajo nation, doesn't have electricity. That means a lot of families face the problem of having to heat their homes with coal and wood.

5 The labor of collecting coal and wood every day wasn't the only problem that concerned Kelly. Burning coal and wood creates dust and smoke and can release harmful chemicals into the air. This pollution can cause breathing problems and lung damage. Kelly was worried about the physical toll this type of heating system would take on not only her family's health but also the Navajo community as a whole.



labor = hard physical work

toll = damage or cost

Stop & Discuss

Why was burning coal and wood both necessary and dangerous? Talk with a partner about its good and bad effects.

Navajo Nation

Stop & Discuss

How does Kelly worry about going away to school? Underline two details that describe her worries.

LESSON 4

7 "I've got doughnuts for Miz Adeline's party," Mr. John calls out as he closes up the bakery.

8 "Miz Adeline's cake!" I shout.

9 My hoop **clatters** to the sidewalk. I grab it and the sugar, and race up the block. I can hear Jamara laughing behind me.

10 By the time I reach our apartment, Mama is madder than a hornet. "Kameeka Hayes!" she scolds.

11 "I'm sorry, Mama. I saw Jamara and—"

12 "Girl, I don't want to hear that Hula-Hoopin' nonsense. It's too late now. Miz Adeline's already here. You take yourself on into the living room and explain to Miz Adeline why she won't have cake for her birthday."

13 "Hi, Miz Adeline," I say. "Happy birthday."

14 "Kameeka, come here, baby. Give me a kiss."


15 I come in close and kiss Miz Adeline's soft cheek. Then I whisper in her ear, "You don't really like cake much, do you?"

16 "Baby girl, you know I sure do love cake. Chocolate cake with strawberries and real whipped cream on top." I can't tell her about the cake just yet.

clatters = makes a loud rattling sound from hitting a hard object

Stop & Discuss

How does Kameeka feel about telling Miz Adeline that there is no cake? Underline two details that help you understand Kameeka's feelings.



LESSON 4 | Everyone Makes Mistakes **65**

SESSION 5 **READ** **LESSON 17**

Elm Park School, 7:00 A.M.

from *Girls Got Game: Sports Stories and Poems*
poem by Christa Champion;
edited by Sue Macy



1 better than gym class
better than recess
better than pizza for lunch—

2 not even ice cream
with fudge sauce
can top it—

3 nothing is sweeter
and no one
can stop it—

4 whenever I want
I can just stop
and pop it—

331 **LESSON 17** | Heart of the Game

SESSION 5 **READ**

5 it's fresh
and it's smooth
on the playground it rules—

6 it just doesn't get
any better
than this—

7 my jump shot
as it drops
through the net
with a swish.



UNIT 5 | Sports **332**

Text-to-Self Connections

Students make personal connections to the lesson topic when they preview lesson texts and explore essential concepts.



Providing Opportunities for Maximum Student Engagement



Creating a Thriving Classroom Community Where All Learners Are Valued

What students read is important, but how they interact with content and the classroom as a community is too. Culturally and Linguistically Responsive teaching gives teachers flexible strategies to:

- ✓ Support and value all cultural and linguistic backgrounds
- ✓ Discover and build on the ways that students show their brilliance
- ✓ Plan instruction that validates and affirms all backgrounds and experiences
- ✓ Draw on students' backgrounds and experiences as opportunities for cross-cultural connection and understanding



Protocols for Engagement and Accountability

Magnetic Reading's engagement protocols:

- Structure activities for engagement
- Promote equitable thinking, talking, and collaborating
- Positively leverage students' cultural behaviors
- Validate and affirm learners

OVERVIEW

Use Protocols That Meet the Needs of All Students

In order to increase engagement and validate cultural and linguistic behaviors, specific protocols are included in the lesson. To further customize activities for your students, consider optional protocols listed on pp. A46–A51.

PROTOCOL	SESSION	VALIDATES
Thumbs-Up	1	connectedness, multiple perspectives
Stand and Share	1, 3	spontaneity, movement, connectedness
Jump in Reading	2	spontaneity, collective success
Give One, Get One	2, 4	movement, shared responsibility
Pick a Stick	2, 6	spontaneity
Musical Shares	4	movement, musicality, social interaction
Somebody Who	5	social interaction

Learn from others?

Use Protocols That Meet the Needs of All Students

In order to increase engagement and validate cultural and linguistic behaviors, specific protocols are included in the lesson. To further customize activities for your students, consider optional protocols listed on pp. A46–A51.

PROTOCOL	SESSION	VALIDATES
Thumbs-Up	1	connectedness, multiple perspectives
Stand and Share	1, 3	spontaneity, movement, connectedness
Jump in Reading	2	spontaneity, collective success
Give One, Get One	2, 4	movement, shared responsibility
Pick a Stick	2, 6	spontaneity
Musical Shares	4	movement, musicality, social interaction
Somebody Who	5	social interaction

Students prepare for this skill:
Determine a theme of a story, drama, or poem from details in the text, including how characters in a story or drama respond to challenges or how the speaker in a poem reflects upon a topic.

Students review and practice:

- Make inferences
- Describe characters
- Determine word meanings



Meet Our *Magnetic Reading* Advisor: Dr. Sharroky Hollie

Dr. Sharroky Hollie is the executive director of the National Institute of Culturally Responsive Teaching and Learning and an advisor on *Magnetic Reading*, guiding the program's Culturally and Linguistically Responsive teaching strategies and analyzing the texts for representation and authenticity.



Pillar 3:

Scaffolds to Support Learner Variability

Student Access to Grade-Level Texts

Magnetic Reading opens access for all students to engage with high-quality, grade-level texts. *Magnetic Reading* includes four important types of scaffolds:

1. Background knowledge and vocabulary
2. Embedded routines
3. Student pairings for reading fluency
4. Point-of-use scaffolds for teachers

LESSON 3

from Cog
by Greg van Eekhout

The Flying Test
by Sara Matson

Down to Earth
by Salima Alikhan

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LESSON 3

- Introduce the focus standard. **Say**, *In this lesson, you will use clues in the text and what you already know to figure out what's happening in a story. This is called making inferences.*

3 INTRODUCE ESSENTIAL CONCEPTS

- Have students work with partners to complete Shades of Meaning.
- Encourage students to identify cognates in their home language, such as *aterrorizada/o*, *nerviosa/o*, and *sorprendida/o*. **EL**
- Have students **Shout Out** the stronger feeling in each pair.
 - Where clarification is needed, have students **Stand and Share** their ideas.
 - Encourage students to illustrate the meaning of a word by brainstorming examples of situations that might make someone feel that way.
 - Guide students to justify their answers by explaining their reasoning. Provide examples and sentence frames as needed.
- Use **LISTEN FOR** to monitor understanding. Use **Help & Go** scaffolds as needed.
- **LISTEN FOR** Students accurately identify the stronger emotion in each word pair.

HELP & GO: Vocabulary

- Ask volunteers to share an example of a situation that might cause a person to feel *startled* or *shocked*. Compare the situations to help students figure out which word describes a more extreme feeling. *If a loud sound causes a person to feel startled and a terrible car accident causes a person to feel shocked, then shocked is stronger.*
- Have volunteers act out each emotion to help the class determine which is the stronger feeling in each pair.
- Guide students to look inside the words to identify base words and brainstorm related words with the same base. *terror, terrifying*
- Have partners use emotion words in a sentence to describe personal experiences. **EL**

LESSON 3 | Future Worlds 43

Background-Building Scaffolds

Essential Concepts Activity

Essential Concepts Activity provides opportunities to build background knowledge and key concept vocabulary.

Scaffolds for In-the-Moment Support

Listen Fors and Help & Go scaffolds provide quick, formative guidance to help teachers get students back on track in a lesson.

Support for English Learners

Strategic scaffolds for English Learners are embedded throughout the Teacher's Guide and are identified by **EL** abbreviations.

Text “Chunking” for Reading Stamina

Every text in *Magnetic Reading* is broken into segments to make reading digestible for students to read grade-level texts more confidently.

SESSION 3 READ **LESSON 3**

The Flying Test

by Sara Matson

It's September 3012, and Captain Amara Rivera is coming home after leading a journey to Jupiter's moon Europa. Everyone's excited about the astronaut's return—except her daughter, Luna, who's thinking about passing her flying test before she turns thirteen.

FREE POD PARKING

examiner = person who gives and grades a test

navigating = following a route or path

Stop & Discuss
What happens during and after Luna's test?
Use details from the text to explain your ideas.

During the test, ___ After the test, ___

48 UNIT 1 | Facing Challenges

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5 No! Luna got on the bus and slumped into a seat.

6 Another beep. This message was from Dad.

7 MOM HOME. CAN'T WAIT TO SEE YOU. HURRY!

8 Mom. Luna felt like she'd eaten a pound of moon dust. It was the worst thing that had ever happened to her! She pictured the headlines: *Famous Flier Amara Arrives Home to Husband and Daughter, the Flying Failure.*

9 After the bus let her off, Luna walked home as slowly as possible, and once she was outside the apartment, she hesitated. What if she just didn't go in?

10 Another beep. *WHERE ARE YOU?*

11 There was no avoiding it. She slid her watch under the scanner and unlocked the door.

Stop & Discuss
What does Luna do after she gets her dad's message? Why?
Underline details in paragraphs 8 and 9 that show what she does.

LESSON 3 | Future Worlds

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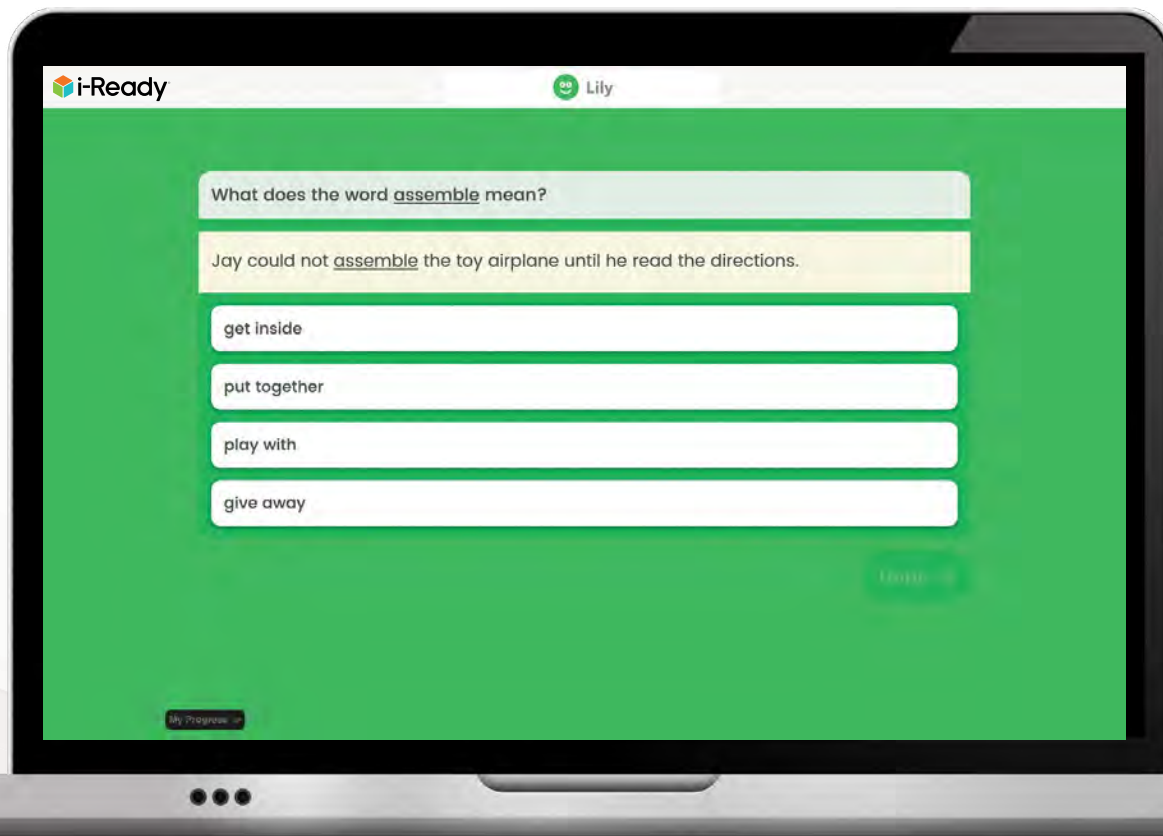
Stop & Discuss

These activities build academic discourse by providing opportunities for students to grapple with what they are reading in the moment with their classmates.



Pillar 4: Data to Inform Instruction

Magnetic Reading is situated within the *i-Ready* product suite, giving educators the resources and flexibility to meet their instruction and assessment needs. The *i-Ready* suite has the tools for diagnosing and monitoring progress, providing whole class instruction, and setting students on a personalized learning path. *i-Ready* assessments and Personalized Instruction strategically address students' individual learning needs and make the best use of educators' time with actionable reports.



Grade-Level Scaffolding

Subject: Reading | Class/Report Group: Reading Class A | Grade of Content: Grade 4 Magnetic R.L. | Lesson: Unit 1: Lesson 1: It's...

Unit 1: Lesson 1: It's a Mystery

Text Scaffolding
(Use this area to have all students read grade-level texts during Sessions 1, 3, and 5 of this lesson.)

Text	Background Knowledge Demands	Text Lexile®
The Lost Medals	View	660L
The Glitter Trap	View	670L
The Case of the Missing Plant	View	620L

Reading Buddies
(Students Included/Total: 25/24)

Paired Reading: 22 Students | Teacher Support: 3 Students

[All Reading Buddies](#)

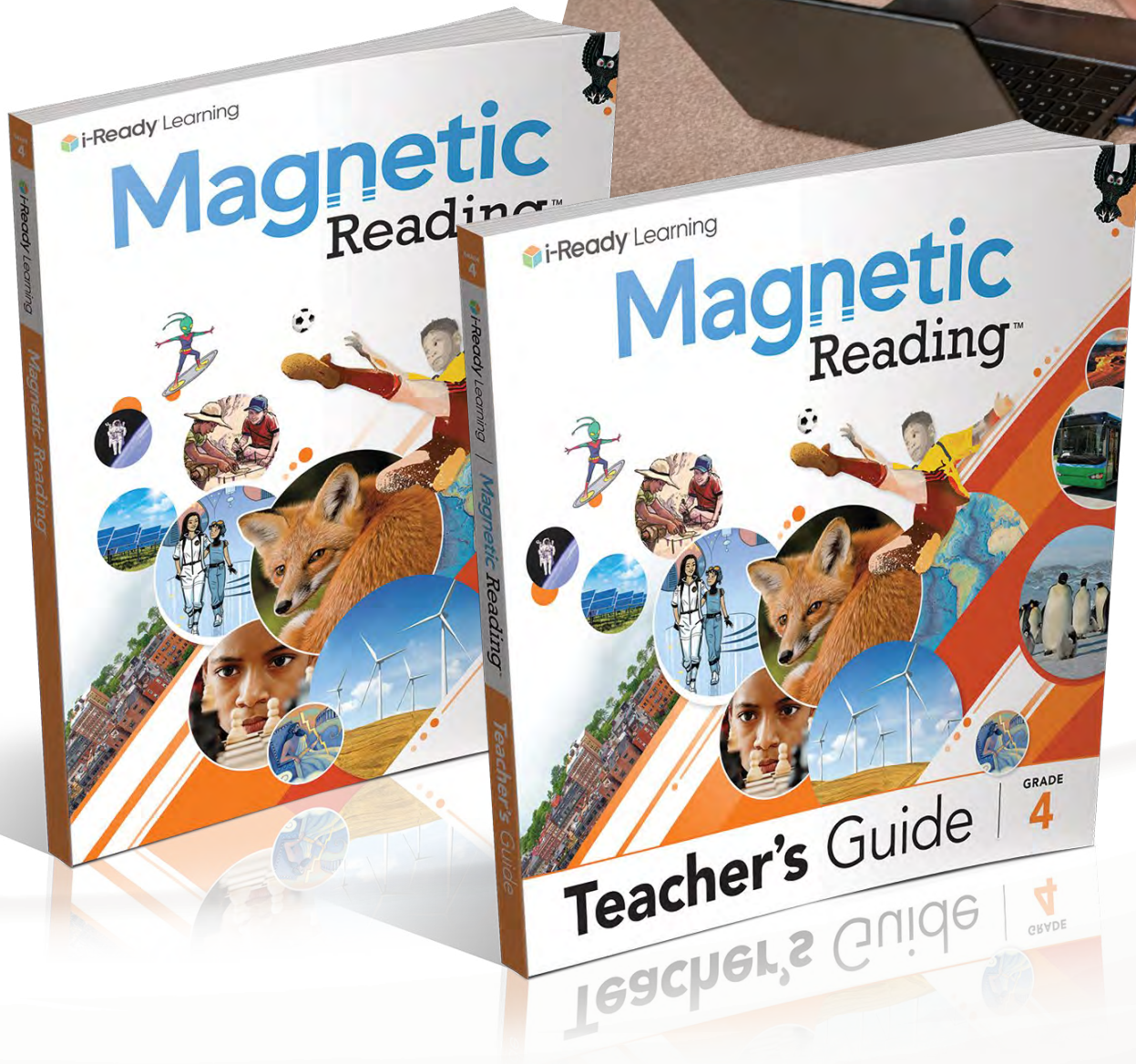
Skill Scaffolding
(Consider using these resources ahead of teaching the comprehension skill in Sessions 2 and 4 of the lesson with all students.)

Focus Standard: RL.4.2 Summarize the text. Students Grouped Total: 25/26 (No Diagnostic: 1)

Ready to Go	Additional Support	In-Depth Support	Needs Support Decoding	No Diagnostic
12 Students	6 Students	4 Students	3 Students	1 Student
Students are ready to summarize a story.	Students may need support recognizing the differences between minor details and important details.	Students may need support recalling events from a story in sequence.	Students need explicit instruction on decoding in addition to their comprehension instruction.	
<p>✓ Ready to Go</p> <p>Tools for Scaffolding Comprehension: Identify the Most Important Events</p> <p>Teacher - Use Scaffold B Student - Use Scaffold B</p>	<p>Tools for Scaffolding Comprehension: Identify the Most Important Events</p> <p>Teacher - Use Scaffold A Student - Use Scaffold A</p>	<p>Tools for Scaffolding Comprehension: Identify the Most Important Events</p> <p>Teacher - Use Scaffold A Student - Use Scaffold A</p>	<p>Skill 5: Decode Words with Silent Letters</p> <p>Consider using a phonics intervention program, such as PHONICS for Reading.</p>	
Bird, Andrew Fields, Malik Fischer, Mira Fitzgerald, Emmanuel Hodges, Niki Lowery, Juliana Patil, Elizabeth Sherman, Eleanor Smith, Adrian Sutton, Elijah Thornton, Eduardo Velez, Annabelle	Battle, Aran Blankenship, Fabiana Delacruz, Evelyn Newton, Luis Spencer, Nolan Vega, Kayla	Gregory, Olivia Keefe, Adam Pratt, Seth Short, Ryan	Espanoza, Ruby Koffman, Abe Washington, Traci	No Diagnostic 1 Student Murphy, Shada

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View the [Diagnostic Status](#) report, and have students complete the Diagnostic to appear in a group.

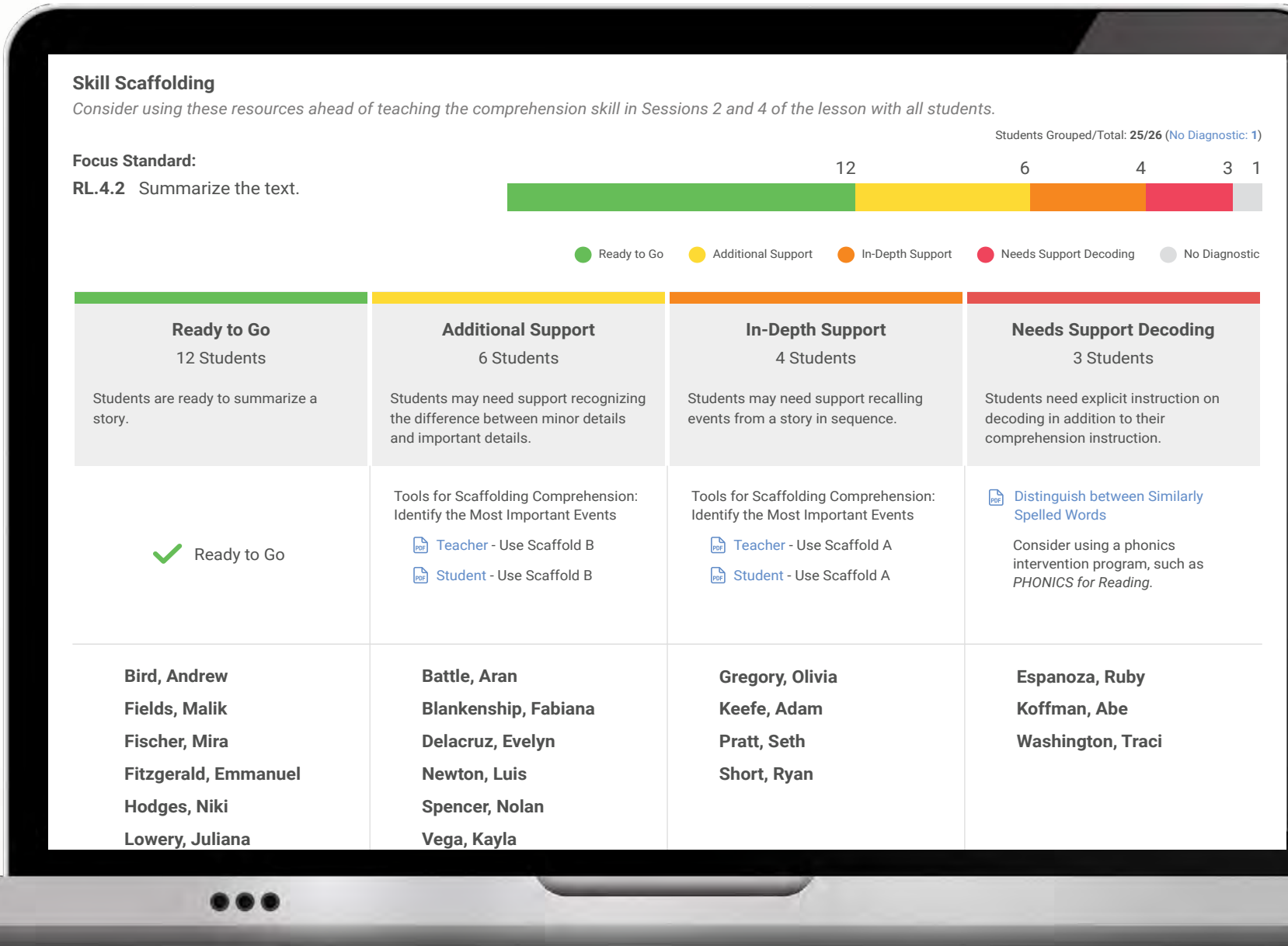




Data-Informed Instruction at the Lesson Level: The Grade-Level Scaffolding Report

If you are looking for granular, lesson-level insights into your students' text readiness and reading skills, look no further! *Magnetic Reading* works seamlessly with the *i-Ready Diagnostic* to bring data-driven insights to the classroom.

The custom **Grade-Level Scaffolding report** delivers reliable, lesson-level insights for each student to determine and recommend the level of support they need to access grade-level texts.



Grade-Level Scaffolding Report Answers:



What are students reading in this lesson, and how might it challenge them?



Which students are ready for the lesson's Focus Skill? Which students need In-Depth Support?

Grade-Level Scaffolding

Subject: Reading | Class/Report Group: Reading Class A | Grade of Content: Grade 4 Magnetic R... | Lesson: Unit 1: Lesson 1: It's...


Grade 4 | Unit 1: Lesson 1 | It's a Mystery

Background Knowledge Demands

Community Yard Sales

In this story, two brothers visit a yard sale. As needed, share the following with students:

- A yard sale is when a person or family sells items they own that they no longer need or want.
- This event is also sometimes known as a tag sale, stoop sale, rummage sale, or garage sale.
- A community yard sale is when multiple neighbors come together to sell items at the same time. Because there is greater variety in the items for sale, this can sometimes bring in more customers than a yard sale hosted by one seller.



Building on Background Knowledge

The **Grade-Level Scaffolding report** pinpoints the background knowledge to set students up for success before they read.

Student Groups

The **Grade-Level Scaffolding report** provides student groupings at the lesson level to ensure individual needs are met.

Grade-Level Scaffolding

Subject: Reading | Class/Report Group: Reading Class A | Grade of Content: Grade 4 Magnetic R... | Lesson: Unit 1: Lesson 1: It's...

Unit 1: Lesson 1: It's a Mystery

Text Scaffolding
Use this area to have all students read grade-level texts during Sessions 1, 3, and 5 of this lesson.

Focus Question:
What skills can people use to solve a mystery?

Knowledge Building:
Lesson texts build knowledge about:

- The benefits that can come from asking questions and researching
- The importance of using logic and evidence to reach a conclusion
- The danger of jumping to conclusions

Text	Background Knowledge Demands	Lexile® Text Measure
<i>The Lost Medals</i>	View	660L
<i>The Glitter Trap</i>	View	670L
<i>The Case of the Missing Plant</i>	View	620L

Reading Buddies
(Students Included/Total: 25/26)

Paired Reading **Teacher Support**

22 Students 3 Students

[All Reading Buddies](#)

Skill Scaffolding
Consider using these resources ahead of teaching the comprehension skill in Sessions 2 and 4 of the lesson with all students.

Students Grouped/Total: 25/26 (No Diagnostic: 1)

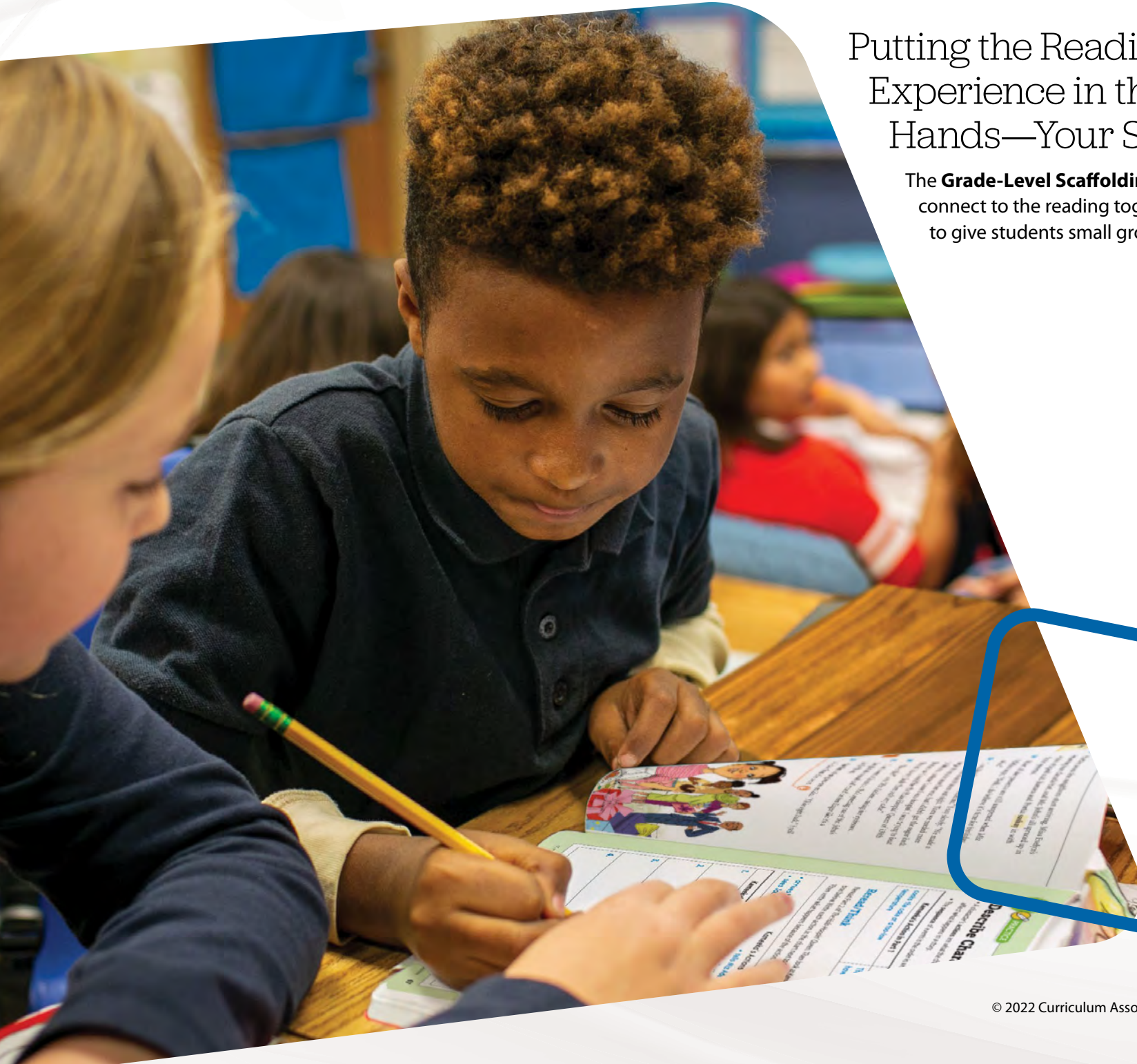


Reading Buddies: The Grade-Level Scaffolding Report

Students are strategically placed in well-matched, mixed-level pairs. This research-based scaffold provides an opportunity for readers to gain fluency as they move toward reading independence.

Putting the Reading
Experience in the Right
Hands—Your Students’!

The **Grade-Level Scaffolding report** lets buddies connect to the reading together, freeing up teachers to give students small group decoding support.



Magnetic Reading's Grade-Level Scaffolding Report Answers:



What is the best way to pair students for Buddy Reading during the lesson?

The Research behind Our Reading Pairs

Reading in pairs is a research-proven way to help both partners improve. Using students' Lexile® reading measure*, the report generates mixed-level partners for the class. The lower reader benefits from hearing the higher reader read fluently while also being in close enough proximity to the higher reader to keep up. Students who particularly benefit from Buddy Reading for this text are shown in light blue, and students who need teacher support are in red.

Unit 1: Lesson 1 | It's a Mystery
Reading Buddies

Text (Lexile® Text Measure)
The Lost Medals (660L)

● Ready (Paired) ● Ready (Pairing Provides Support) ● Needs Teacher Support

Paired Reading (22 students)
Students are strategically placed in well-matched, mixed-level pairs. Have pairs alternate reading sections of the text aloud. This research-based scaffold provides an opportunity for readers to gain fluency as they move toward reading independence.

Elizabeth Patil Lexile: 900L	Eduardo Thornton Lexile: 700L	Juliana Lowery Lexile: 740L	Fabiana Blankenship Lexile: 560L
Malik Fields Lexile: 820L	Nolan Spencer Lexile: 680L	Annabelle Velez Lexile: 740L	Olivia Gregory Lexile: 560L
Mira Fischer Lexile: 800L	Kayla Vega Lexile: 650L	Andrew Bird Lexile: 730L	Ryan Short Lexile: 540L
Elijah Sutton Lexile: 760L	Aran Battle Lexile: 620L	Emmanuel Fitzgerald Lexile: 720L	Adam Keefe Lexile: 530L
Niki Hodges Lexile: 750L	Evelyn Delacruz Lexile: 600L	Eleanor Sherman Lexile: 700L	Seth Pratt Lexile: 520L
Adrian Smith Lexile: 750L	Luis Newton Lexile: 570L		

Teacher Support (3 students)
The students below need support decoding. Use shared reading or teacher read-aloud with these students.

Ruby Espanoza	Abe Koffman	Traci Washington
----------------------	--------------------	-------------------------

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Kuhn, M. R., & Schwanenflugel, P. J. (Eds.). (2008). *Fluency in the classroom*. Guilford Press.

Meisinger, E. B., Schwanenflugel, P. J., Bradley, B. A., & Stahl, S. A. (2004). *Interaction quality during partner reading*. *Journal of Literacy Research*, 36(2), 111–140.

Program Components: *Magnetic Reading*, Digital Access for *Magnetic Reading* (through the Teacher Toolbox), and *i-Ready Assessment*

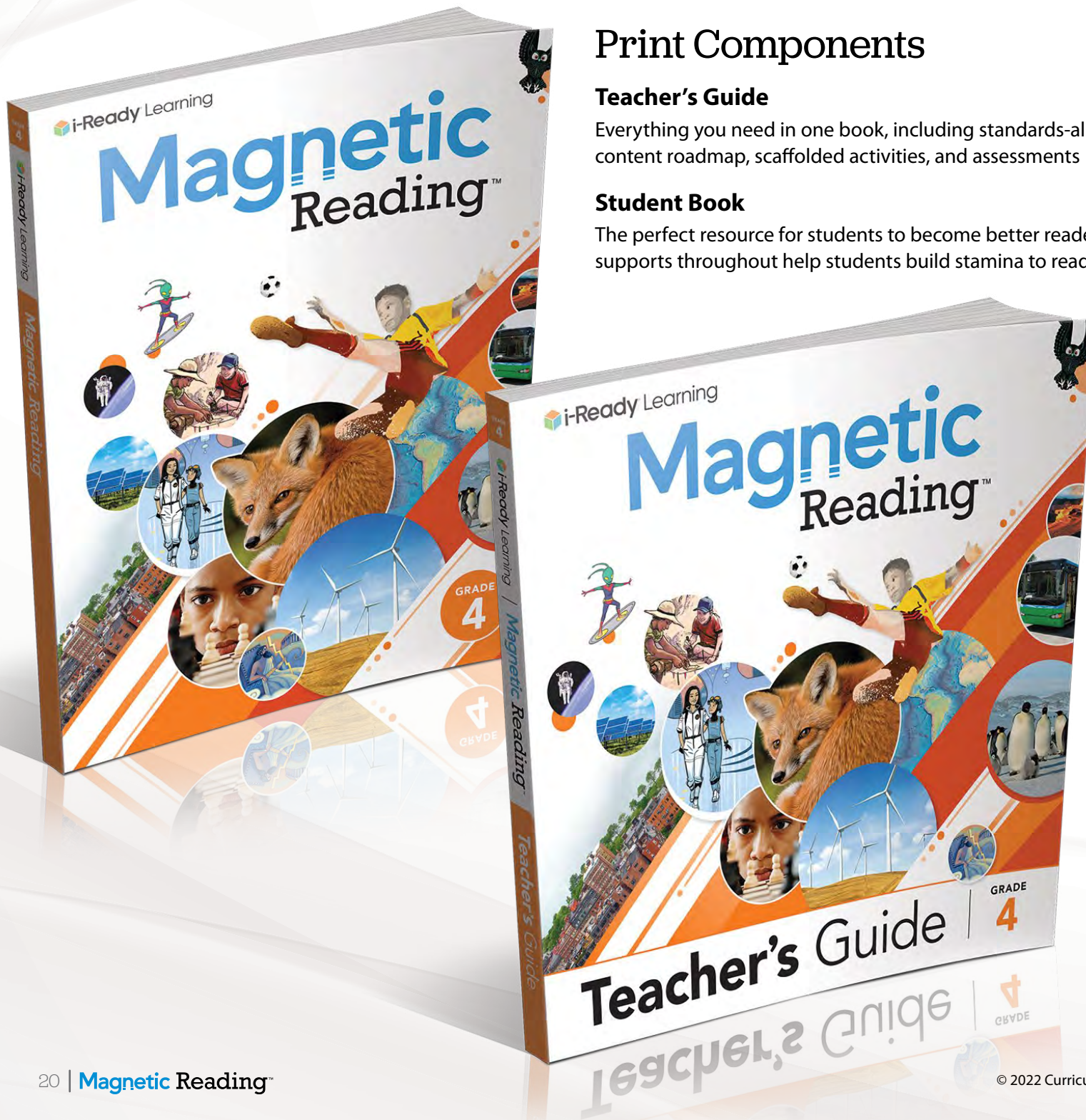
Print Components

Teacher's Guide

Everything you need in one book, including standards-aligned curriculum, content roadmap, scaffolded activities, and assessments

Student Book

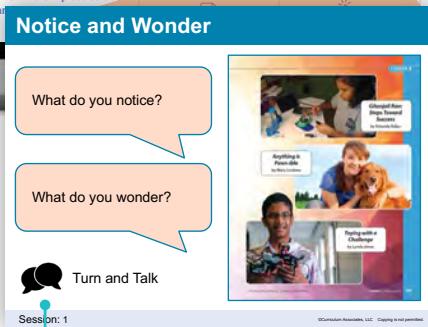
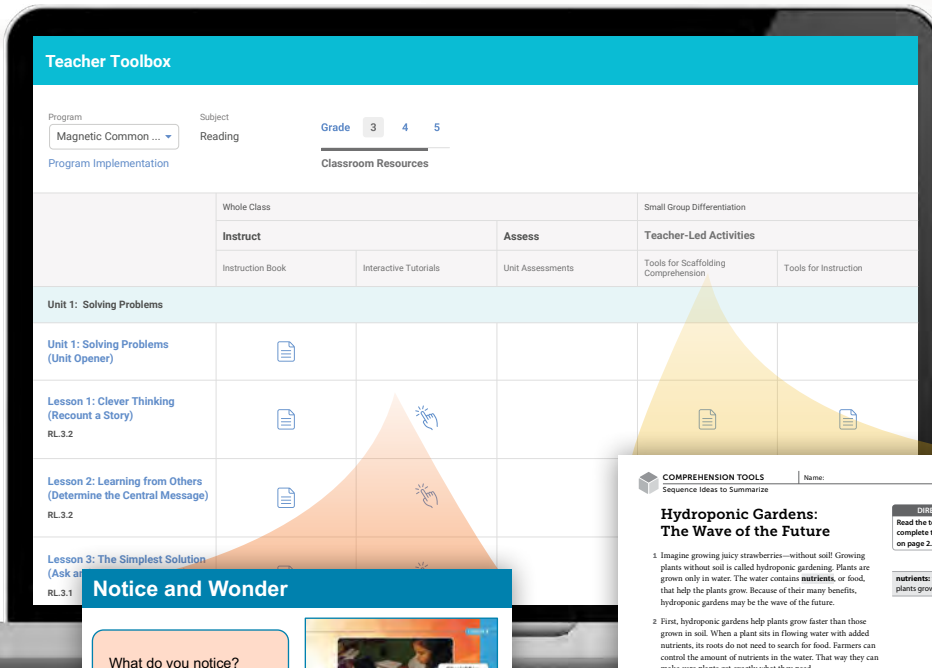
The perfect resource for students to become better readers. Scaffolded supports throughout help students build stamina to read grade-level content.



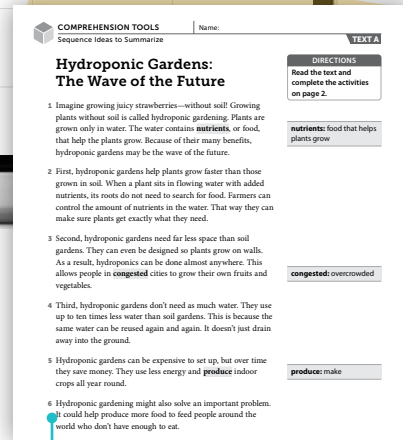
Digital Access for *Magnetic Reading* (through the Teacher Toolbox)

Additional Instructional Materials:

- Teacher's Guide
- Student Book
- Language Handbook
- Unit Assessments
- Lesson Slides
- Lesson 0
- Interactive Tutorials
- Tools for Instruction
- Tools for Scaffolding Comprehension
- Prerequisite *Magnetic* Lessons (Grades 4 and 5)
- Discourse Cards and Support
- Supplementation Documents
- Unit Progression Charts



Lesson slides allow teachers to display instructional guides for each *Magnetic Reading* lesson.

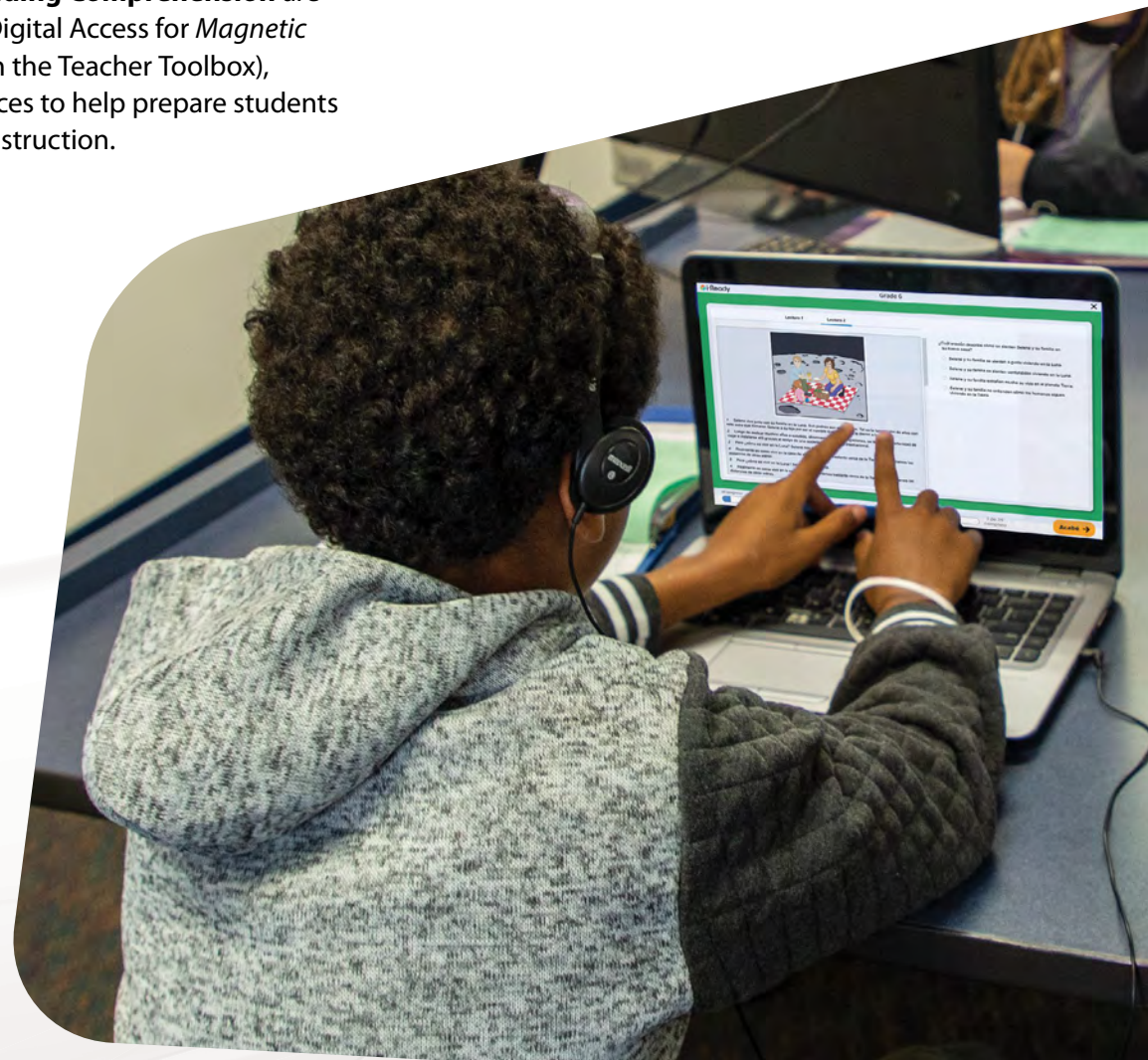


Tools for Scaffolding Comprehension are available in the Digital Access for *Magnetic Reading* (through the Teacher Toolbox), providing resources to help prepare students for grade-level instruction.

i-Ready Assessment

The *i-Ready* Assessment empowers you to make data-driven decisions with *Magnetic Reading* instruction. Consult the **Grade-Level Scaffolding report** before teaching each *Magnetic Reading* lesson to plan reading and standards-based instructional scaffolds with students' individual needs in mind.

- Within each lesson, *Magnetic Reading* provides ongoing opportunities to monitor comprehension and track student progress throughout each lesson.
- Each *Magnetic Reading* **Unit Assessment** targets the standards covered within a unit. Alternatively, you can also assess the standards taught in each unit using *i-Ready Standards Mastery*. Standards Mastery provides insight into the skills students struggle with and those they have mastered, providing ongoing data to inform planning for remediation and enrichment.



A Deeper Look at *Magnetic Reading's* Program Structure

Sharpen Skills and Build Knowledge with the Focus Lessons

Each **Focus lesson** follows a six-session structure.

Session 1:

Scaffold Reading

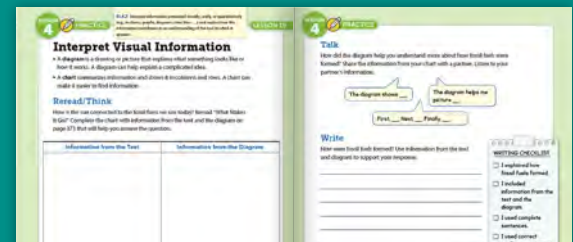
- Build background knowledge.
- Explore conceptual vocabulary.
- Read/discuss Text 1.



Session 4:

Practice the Focus Standard

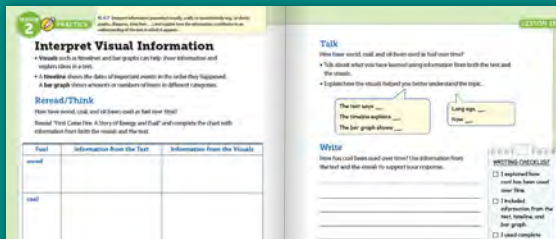
- Revisit the Focus Standard.
- Apply the Focus Standard to analyze Text 2.



Session 2:

Practice the Focus Standard

- Discuss the Focus Standard.
- Apply the Focus Standard to analyze Text 1.



Session 5:

Independent Reading and Practice

- Read Text 3.
- Build knowledge of the lesson topic.
- Independently apply the Focus Standard.



Session 3:

Scaffold Reading

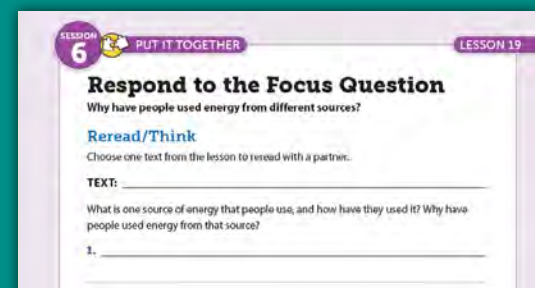
- Read/discuss Text 2.
- Build knowledge of the lesson topic.



Session 6:

Respond to the Focus Question

Synthesize knowledge from Texts 1, 2, and 3.



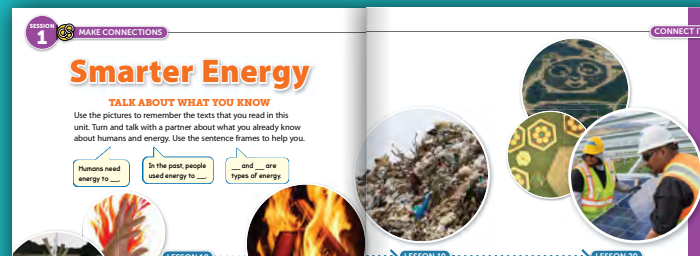
Synthesize Learning with the **Connect It Lessons**

These lessons offer a culminating experience to the unit. Each **Connect It lesson** follows a four-session structure.

Session 1:

Connect Concepts, Build Background

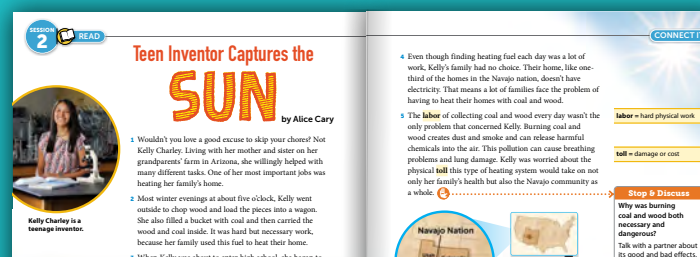
Build on key unit concepts and explore vocabulary to build background knowledge for the culminating text.



Session 2:

Read a Culminating Text

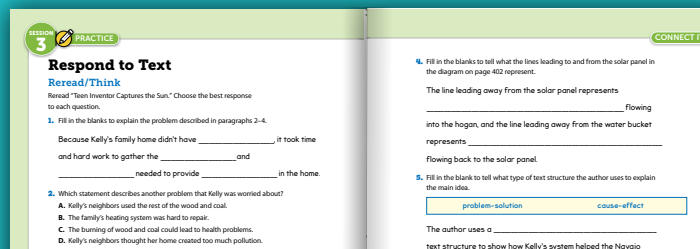
Students read a longer, culminating text that builds on knowledge gained in previous lessons.



Session 3:

Practice the Unit Standards

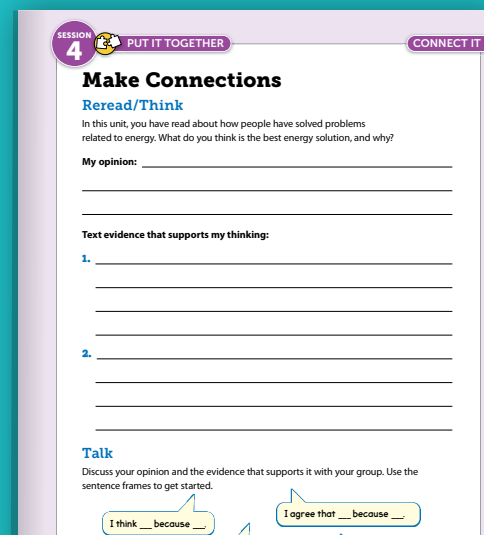
Students work independently to complete tasks that integrate practice of previously taught unit standards.



Session 4:

Synthesize Knowledge across Unit Texts

Students "put it all together" in an activity that explores the unit topic and requires students to make connections between the Connect It text and other unit texts.



Grade 4 Sample Content

Unit 6, Lesson 19: Sources of Energy

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Student Book

Read through Unit 6, Lesson 19: Sources of Energy.



Teacher's Guide

See the companion Teacher's Guide pages for the same lesson. Keep an eye out for additional information about specific features!



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Sources of Energy

FOCUS QUESTION

Why have people used energy from different sources?

NOTICE AND WONDER

Look at the titles and images of the three texts you will read in this lesson. What do you notice? What do you wonder? Discuss your ideas with a partner.

TALK ABOUT WORDS

Circle the terms below that you know. Pick one term and tell a partner what you know about it.

energy renewable resources

fuel nonrenewable resources

waste fossil fuels

I think the word ___ means ___ because ___.

One example of ___ is ___.

First Came Fire:
A Story of
Energy and Fuel
by Jessica Miller



What Makes It Go?
by Stephanie Peters



Cool Solutions:
Trash to Gas
by Danielle Jansen





First Came Fire

A Story of Energy and Fuel

by Jessica Miller


source = where something comes from

dung = animal waste

Stop & Discuss

Why did people look for fuels?

Underline details that tell why people looked for fuels. Discuss the details with your partner.

- 1 People have used fire for thousands of years to cook food, stay warm, and light up the dark. Fire is a powerful **source** of energy. But to make fire and use its energy, you need a fuel. So, for as long as people have been using fire, they have been looking for fuel.
- 2 People found that certain types of materials, such as wood, oil, and animal **dung**, could be burned as fuel for a fire. For a long time, wood was the main source of fuel for many people. But as more and more trees were cut down, people searched for other fuels and, finally, found something deep underground: coal. 

FUEL USE

More than 400,000 years ago

People begin to control fire and use it for heat, light, and cooking. People use fuel such as wood and dried dung, or animal poop.



More than 3,000 years ago

Coal is first used in China.



1500s

Coal replaces wood as fuel in parts of Europe. As time goes on, coal is used by more and more people.



1821–1859

First successful natural gas well is dug (1821) and first oil well is drilled (1859) in the United States.

- 3 Coal is a fuel that looks like hard black lumps of rock. It formed over millions of years from dead plants that got buried under layers of dirt and rock. Pound for pound, coal gives off more energy when it is burned than wood does, and it burns longer, too. Coal continues to be used to heat homes, as well as to power engines and generate, or make, electricity.
- 4 Natural gas and petroleum are other fuels that formed over millions of years from living things that died. In the 1850s, people in the United States started using petroleum, also called oil. Gasoline, which powers many cars and trucks, is made from oil.
- 5 Over time, scientists have learned that fuels such as coal and oil have **disadvantages**. Burning them pollutes the air, and they can't be replaced once they're used up. So, more and more people are turning to different sources of energy to power their homes, vehicles, and machines.

disadvantage = problem; a thing that causes difficulty

Stop & Discuss

How is coal helpful?
How is it harmful?

Underline one way coal is helpful and one way it is harmful.

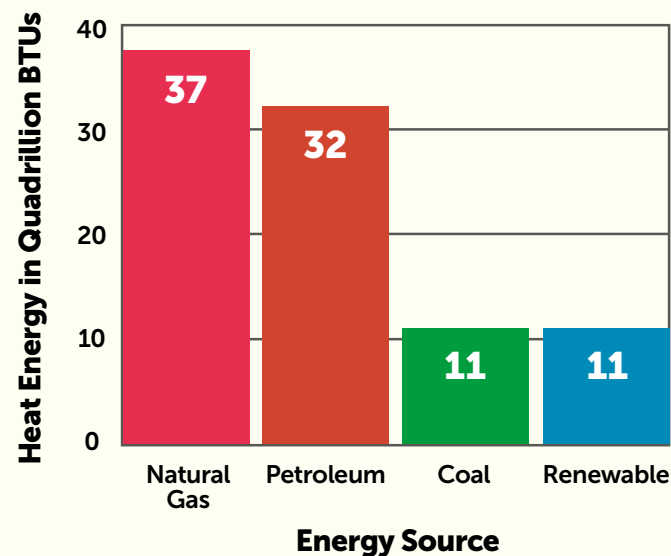


1880s

First electricity plants are built. The plants are fueled by coal. Electricity is used for lighting and for powering trains and other vehicles.



TOP ENERGY SOURCES IN THE U.S. IN 2019



SESSION  PRACTICE
2

Interpret Visual Information

- **Visuals** such as time lines and bar graphs can help show information and explain ideas in a text.
- A **time line** shows the dates of important events in the order they happened. A **bar graph** shows amounts or numbers of items in different categories.

Reread/Think

How have wood, coal, and oil been used as fuel over time? Reread “First Came Fire: A Story of Energy and Fuel” and complete the chart with information from both the visuals and the text.

Fuel	Information from the Text	Information from the Visuals
wood		
coal		
petroleum (oil)		

Talk

How have wood, coal, and oil been used as fuel over time?

- Talk about what you have learned using information from both the text and the visuals.
- Explain how the visuals helped you better understand the topic.

The text says ____.

The time line explains ____.

The bar graph shows ____.

Long ago, ____.

Now ____.

Write

How has coal been used over time? Use information from the text and the visuals to support your response.

WRITING CHECKLIST

- I explained how coal has been used over time.
- I included information from the text, time line, and bar graph.
- I used complete sentences.
- I used correct spelling, punctuation, and capitalization.


SESSION
3



WHAT MAKES IT GO?

by
Stephanie
Peters



- 1 True or false: The energy you used to get dressed and go to school this morning came from the sun.
- 2 It's . . . TRUE! Let's think more about this idea.
- 3 Suppose you had orange juice and cereal for breakfast. The fruit in your juice and the grains in your cereal come from plants. The plants grew with energy from the sun. When you eat plants or food made from plants, your body turns that food into energy it can use to do things like get dressed.
- 4 But your body is not the only thing that uses energy from the sun. The bus or car you rode to get to school also runs on energy from the sun. So do trains, ships, and airplanes. Do these vehicles use sunbeams for fuel? Not at all. Rainbows? Cool idea, but nope. To understand the sun's **role** in making the fuels of today, we need to know what was happening on Earth about 300 million years ago. 

role = job that something does

Stop & Discuss

What uses energy from the sun?

Underline two examples of things that use energy from the sun.

- 5 Back then, before dinosaurs lived, plants grew all over Earth. These plants used energy from the sun to make food for themselves, which helped them grow. But once the plants and other living things died, sand and clay covered them, slowly turning to rock. Over time, more and more layers of rock formed over the dead things. The crushing weight of all this rock squeezed the dead material. Then, over millions of years, heat and the pressure from all that rock turned the dead material into fossil fuels.
- 6 Fossil fuels come in three forms: a black rock called coal, a black or brownish liquid called petroleum (oil), and a clear gas called natural gas. (If fossil fuels are rocks, liquid, and gas, why are they called *fossil* fuels? Well, just like fossils, they come from things that lived long ago.)
- 7 Some power plants use fossil fuels to make electricity, and people still burn fossil fuels to heat their homes. Gasoline, which is made from oil, powers most of the cars, buses, trains, and airplanes we use to travel. All these fossil fuels we burn come from plants that grew millions of years ago using energy from the sun.

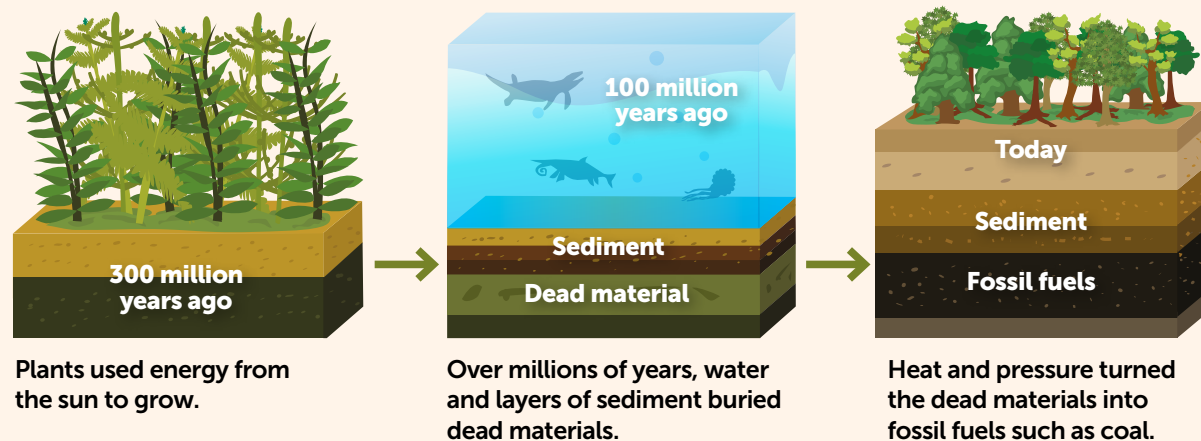
Stop & Discuss

Which statement would the author agree with?

- Fossil fuels form slowly, but people use them a lot.
- Fossil fuels form quickly, and people use them a little.

Explain your choice to a partner.

HOW FOSSIL FUELS WERE FORMED






SESSION
3 READ

alternative = different

solar energy = energy from the sun

- 8 Today, more than 80% of the world's energy still comes from fossil fuels. But petroleum, coal, and natural gas will not last forever, and they take millions of years to be replaced. They are nonrenewable resources. They also create pollution, which harms human health and the environment. So, people must find **alternative** sources of energy.
- 9 Renewable resources are one option. Renewable energy sources, such as **solar energy**, wind energy, and hydropower (water power), do not create pollution and they will not run out. When it is cloudy or calm, we don't have to wait long for more sun and wind. At least not as long as the millions of years it would take for dead animals or plants to turn into oil or coal!
- 10 People have explored different ways to use energy from natural resources for centuries. And every new discovery has had a huge effect on the way people live. What will the energy of the future be?

RENEWABLE RESOURCES

ENERGY SOURCE	DESCRIPTION
 <p>Solar</p>	<ul style="list-style-type: none"> • Energy from sunlight • Can be turned into electricity or heat • Heats buildings, warms water, powers vehicles and tools
 <p>Wind</p>	<ul style="list-style-type: none"> • Energy from moving air (wind) • Can be used to generate electricity • Wind turns the blades of a turbine. The turbine spins a generator, which generates electricity.
 <p>Hydropower</p>	<ul style="list-style-type: none"> • Energy from moving water • Can be used to produce electricity • Flowing water turns a turbine to spin a generator, which generates electricity.

Stop & Discuss

What is the difference between renewable and nonrenewable resources?

Use details and examples from the text and chart to support your answer.

Renewable resources are different because ____.



Interpret Visual Information

- A **diagram** is a drawing or picture that explains what something looks like or how it works. A diagram can help explain a complicated idea.
- A **chart** organizes information in a way that makes it easier to find and understand.

Reread/Think

How is the sun connected to the fossil fuels we use today? Reread “What Makes It Go?” Complete the chart with information from the text and the diagram on page 373 that will help you answer the question.

Information from the Text	Information from the Diagram

SESSION
4



PRACTICE

Talk

How did the diagram help you understand more about how fossil fuels were formed? Share the information from your chart with a partner. Listen to your partner's information.

The diagram shows ____.

The diagram helps me picture ____.

First, ____ Next, ____ Finally, ____.

Write

How were fossil fuels formed? Use information from the text and diagram to support your response.

WRITING CHECKLIST

- I explained how fossil fuels formed.
- I included information from the text and the diagram.
- I used complete sentences.
- I used correct spelling, punctuation, and capitalization.



COOL SOLUTIONS: TRASH TO GAS

by Danielle Jansen

- 1 Lunch is almost over. You crunch into the last morsel of your apple. Then you toss your apple core into the trash bin. In a week or two, this trash will be dumped in a landfill, where the trash will remain.
- 2 In the United States, people throw away tons and tons of waste every year, and most of it goes to landfills. Can you guess the most common type of waste at landfills? It's not plastic, and it's not paper—it's food!
- 3 Food is a kind of organic waste. Organic waste is plant or animal material that breaks down over time. This waste takes up a lot of space in landfills, but imagine if it could be turned into something useful, instead of sitting in a landfill, left there to rot.
- 4 Sweden has thought of one solution. In 2005, the country **banned** organic waste in landfills. What does Sweden do with all this organic waste, then?



banned = stopped allowing

HOW BIOGAS IS MADE



Organic waste is collected and prepared.



The organic waste goes in a big tank where bacteria break it down.



As bacteria break down the organic waste, biogas is produced.



Biogas is turned into fuel that powers vehicles.

- 5 The waste is taken to a plant, a place where something is produced. At the plant, waste is broken down by tiny living things called bacteria. When bacteria break down the waste, they produce biogas. Biogas can be used as a fuel to power cars, buses, and other vehicles. In fact, this biogas powers more than 200 city buses in Sweden!
- 6 But people don't stop at recycling food waste. Some have also developed plants that reuse animal manure from farms or human waste (poop) that gets flushed down the toilet. Why *poop*? Well, when poop breaks down, it can also create biogas!
- 7 Here's how it works: The waste that people flush down the toilet travels to a treatment plant. There, the waste is separated from water. Machines take this waste, remove and clean the water, and then release the water into the sea. What's left is lots of thick muddy stuff called sludge. As the sludge breaks down, it makes biogas. The treatment plant uses biogas to make fuel for vehicles.
- 8 People are still looking for new ways to use waste, and maybe one day, all our trash will skip the landfill and become fuel.



Respond to Text

Reread/Think

Reread "Cool Solutions: Trash to Gas." Choose the best response to each question.

- Which information from the text is also in the diagram on page 378?
 - Organic waste takes up a lot of space in landfills.
 - Machines separate human waste from water.
 - Biogas can be used as a fuel to power cars, buses, and other vehicles.
 - The waste people flush down the toilet travels to a treatment plant.
- What does the word *common* mean as it is used in paragraph 2?
 - belonging to all
 - appearing a lot
 - simple
 - general
- Write an **X** in the box next to each detail to show whether it describes information in the text, information in the diagram, or information in both the text and the diagram.

	Text	Both	Diagram
The waste is taken to a power plant.			
The organic waste goes in a big tank.			
Biogas is turned into fuel for vehicles.			

SESSION **5** PRACTICE

Reread/Think

4. How does the diagram on page 378 help the reader understand paragraph 5?
- A. It shows the steps organic waste goes through to become fuel.
 - B. It shows the amount of organic waste needed to make biogas.
 - C. It shows how long it takes to make biogas with organic waste.
 - D. It shows how often the big tank is filled with organic waste.

Write

How do details from both the text and the diagram explain how waste is turned into fuel? Use at least **one** example from the text and **one** from the diagram to support your response.

WRITING CHECKLIST

- I answered the question.
- I used at least one example from the text and one from the diagram.
- I used correct spelling, punctuation, and capitalization.



Respond to the Focus Question

Why have people used energy from different sources?

Reread/Think

Choose one text from the lesson to reread with a partner.

TEXT: _____

What is one source of energy that people use, and how have they used it? Why have people used energy from that source?

1. _____

2. _____

Talk

Share what you learned from the text you reread. Use the sentence frames to get started.

People have used
energy from ___ to ___.

People have used ___ as a
source of energy because ___.

Write

Why have people used energy from different sources? Use information from at least two texts in your response.

Build Knowledge

The texts in this unit explore the relationship between humans and energy in literature, history, and today.

- In Lesson 18, **First Fires**, students read traditional stories from different cultures about where fire came from and why it's important to people.
 - “Maui and the Flaming Fingernails,” myth
 - “Coyote Steals Fire: A Shoshone Tale,” myth
 - “Prometheus’s Gift,” myth
 - “The First Fire,” myth
- In Lesson 19, **Sources of Energy**, students read informational texts about how people use energy from different resources and continue to find new ways to harness energy.
 - “First Came Fire: A Story of Energy and Fuel,” science article
 - “What Makes It Go?” science article
 - “Cool Solutions: Trash to Gas,” science article
- In Lesson 20, **Solar Power**, students read informational texts about diverse and creative ways people are using solar power.
 - “Panda Power,” science article
 - “From Race Cars to Solar Cells,” science article
 - “Powering a Community,” science article

Humans and Energy

LESSON 18

First Fires

348



LESSON 19

Sources of Energy

366

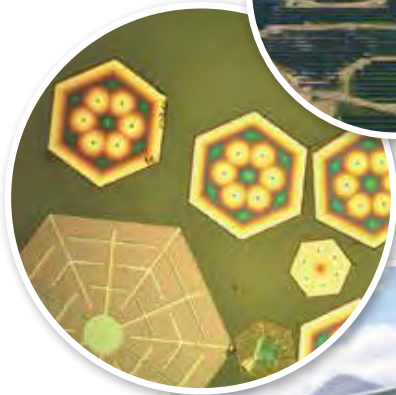


UNIT 6

LESSON 20

Solar Power

382



CONNECT IT

Smarter Energy

398



- The Connect It Lesson, **Smarter Energy**, features a culminating text about Kelly Charley, a Navajo teen who invented a solar-powered heater.
—“Teen Inventor Captures the Sun,” science article

Preview the Unit

- Introduce the unit topic and read aloud the lesson titles.
- **Say**, *Look at the titles and pictures. What questions or predictions do you have about what we will learn?*
- Use **Stand and Share** to have 2–3 students share a question or a prediction.

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UNIT 6 | Humans and Energy

OVERVIEW

Sources of Energy

FOCUS QUESTION

Why have people used energy from different sources?

Culturally and Linguistically Responsive instructional protocols are included in each lesson.

Suggestions for grouping and skill-specific resources support planning and help **scaffold instruction**.

About the Lesson

OBJECTIVES

Content Objectives

- Understand information in time lines, graphs, diagrams, and charts.
- Explain how visuals support understanding of a text.
- Understand that energy comes from nonrenewable and renewable resources.

Language Objectives

- Compare and contrast information from text and visuals, using a graphic organizer.
- Use complete sentences to tell a partner how time lines, graphs, diagrams, and charts support understanding.
- Explain in writing why people have used energy from different sources.

ACADEMIC TALK

See **Glossary of Terms** on pp. 478–485.
visuals, time line, bar graph, diagram, chart

Spanish Cognates

visuales, diagrama

Build Knowledge

Lesson texts build knowledge about:

- Why people have used different natural resources as fuel
- How people use energy from both nonrenewable and renewable resources
- How people have found ways to use energy from recycled waste

Plan Student Scaffolds

- Use **i-Ready data** to guide grouping and choose strategic scaffolds.
- Use **Teacher Toolbox** resources as needed to address related skills:
 - Cite textual evidence
 - Text structure
- Partner English Learners with students who can serve as language models to support them during Sessions 2 and 4. **EL**
- Preview texts and activities to anticipate barriers to engagement, access, and expression. Modify based on needs.

Use Protocols That Meet the Needs of All Students

In order to increase engagement and validate cultural and linguistic behaviors, specific protocols are included in the lesson. To further customize activities for your students, consider optional protocols listed on pp. A46–A51.

PROTOCOL	SESSION	VALIDATES
Vote with Your Feet	1	movement, multiple perspectives
Give One, Get One	1, 2	movement, shared responsibility
Pass It On	1, 3, 5	spontaneity, connectedness
Jump in Reading	2	spontaneity, collective success
Pick a Stick	2, 3	spontaneity
Shout Out	3, 4, 5	spontaneity, multiple ways to show focus
Musical Shares	4	movement, musicality, social interaction

LEARNING PROGRESSION | Interpret Visual Information

Students build on this skill:
RI.3.7 Use information gained from illustrations and the words in a text to demonstrate understanding of the text.

Students learn this skill:
RI.4.7 Interpret information presented visually, orally, or quantitatively and explain how the information contributes to an understanding of the text in which it appears.


Students prepare for this skill:
RI.5.7 Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently.

Students review and practice:

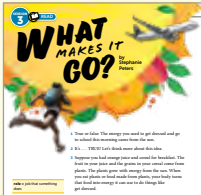
- **RI.4.1** Make inferences
- **RI.4.3** Analyze a scientific text
- **RI.4.4** Determine word meanings

LESSON PLANNING GUIDE


TEXT 1: First Came Fire: A Story of Energy and Fuel • SCIENCE ARTICLE

		TEXT AT-A-GLANCE	ENGLISH LEARNER SUPPORT (EL)
SESSION 1	SCAFFOLD READING 	Concepts/Background <ul style="list-style-type: none"> using fuel to create energy creating fire from fuel how dead plants turn into fuel Language <ul style="list-style-type: none"> Vocabulary: <i>fuel, natural gas, oil well, petroleum, turning to</i> Idiom: <i>pound for pound</i> 	Speaking/Reading <ul style="list-style-type: none"> Activate prior knowledge Listening/Reading <ul style="list-style-type: none"> Analyze phrases Reading <ul style="list-style-type: none"> Leverage cognate knowledge Listening/Speaking <ul style="list-style-type: none"> Use sentence frames
	SESSION 2 PRACTICE THE FOCUS STANDARD <ul style="list-style-type: none"> Formative Assessment 		

TEXT 2: What Makes It Go? • SCIENCE ARTICLE

		TEXT AT-A-GLANCE	ENGLISH LEARNER SUPPORT (EL)
SESSION 3	SCAFFOLD READING 	Concepts/Background <ul style="list-style-type: none"> how energy from the sun is used how rock forms from sand and clay how fossils form Language <ul style="list-style-type: none"> Vocabulary: <i>formed, pressure, power plants, pollution, environment, turbine, nonrenewable, renewable</i> Informal Language: <i>turns into (energy), runs on (energy)</i> 	Speaking/Reading <ul style="list-style-type: none"> Identify informal language, Determine multiple meanings of words Listening/Speaking <ul style="list-style-type: none"> Use sentence frames, Rephrase questions
	SESSION 4 PRACTICE THE FOCUS STANDARD <ul style="list-style-type: none"> Formative Assessment 		

TEXT 3: Cool Solutions: Trash to Gas • SCIENCE ARTICLE

		TEXT AT-A-GLANCE	ENGLISH LEARNER SUPPORT (EL)
SESSION 5	INDEPENDENT READING AND PRACTICE <ul style="list-style-type: none"> Formative Assessment 	Concepts/Background <ul style="list-style-type: none"> how waste moves to landfills using biogas as fuel Language <ul style="list-style-type: none"> Vocabulary: <i>morsel, solutions, waste, organic, break down, recycling, developed, reuse, manure, sludge</i> 	Reading <ul style="list-style-type: none"> Leverage cognate knowledge Speaking/Reading <ul style="list-style-type: none"> Paraphrase, Identify formal language Writing <ul style="list-style-type: none"> Use sentence frames

KNOWLEDGE BUILDING

SESSION 6	RESPOND TO THE FOCUS QUESTION <ul style="list-style-type: none"> Why have people used energy from different sources? 	<ul style="list-style-type: none"> Integrate information from the lesson texts Collaborative discussion Short response 	Reading/Writing <ul style="list-style-type: none"> Use sentence frames Speaking/Writing <ul style="list-style-type: none"> Collaborate with a partner
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Students build knowledge as they read multiple interrelated texts.

SESSION 1 TALK ABOUT THE TOPIC

Before Teaching the Lesson

Preview the texts before teaching the lesson to plan scaffolds. If needed, provide students with information below before they read. Consider alternate means of representing background information, such as images of natural resources or renewable energy or a diagram illustrating how energy changes from one form to another.

- **First Came Fire: A Story of Energy and Fuel**
 - **Energy** makes things move or change. It is connected to motion, heat, and electricity.
 - Energy cannot be created or destroyed, but it can be changed from one form to another.
- **What Makes It Go?**
 - **Natural resources** are materials from the earth that people use to make things. People use some natural resources to change energy from one form to another and produce electricity.
 - **Renewable energy** is energy made from resources such as sunlight, water, and wind that do not “run out” when we use them.
 - **Nonrenewable energy** is made from resources such as fossil fuels. When we burn fossil fuels, we cannot use them again. They cannot be replaced in our lifetime because they take millions of years to form.

Key background knowledge is provided up front so teachers can anticipate and address gaps before students read.

Talk About the Topic

BUILD STUDENTS' INTEREST

- 1
 - Introduce the lesson topic and the Focus Question. Tell students they will read, talk, and write about sources of energy.
 - Have students **Turn and Talk** about the topic and Focus Question.
 - Invite students use their home language. **EL**
 - Have students **Raise a Hand** to share something they know about energy.
- 2
 - Ask students to complete Notice and Wonder with a partner.
 - Use **Vote with Your Feet** to have students show which text they are most interested in reading.

Each lesson starts with **building interest** to get students thinking and talking about the lesson topic.

Each lesson starts with a **Focus Question** that gets students thinking and talking about the lesson topic.

SESSION 1 TALK ABOUT THE TOPIC

Sources of Energy

1 FOCUS QUESTION

Why have people used energy from different sources?

2 NOTICE AND WONDER

Look at the titles and images of the three texts you will read in this lesson. What do you notice? What do you wonder? Discuss your ideas with a partner.

3 TALK ABOUT WORDS

Circle the terms below that you know. Pick one term and tell a partner what you know about it.

energy renewable resources
fuel nonrenewable resources
waste fossil fuels

I think the word ___ means ___ because ___.

One example of ___ is ___.

First Came Fire:
A Story of
Energy and Fuel
by Jessica Miller



What Makes It Go?
by Stephanie Peters



Cool Solutions:
Trash to Gas
by Danielle Jansen



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LESSON 19 | Sources of Energy

- Introduce the focus standard. **Say**, *As you read, you will use the information in visuals, such as time lines and bar graphs, to help you understand the text.*

3 INTRODUCE ESSENTIAL CONCEPTS

- Have students use **Give One, Get One** to complete Talk About Words.
 - Encourage students to identify cognates in their home language to help make sense of unfamiliar terms. Spanish cognates include *energía/energy*, *recurso renovable/renewable resource*, and *recurso no renovable/nonrenewable resource*. **EL**
 - Have students use the sentence frames to help them talk about terms.
- Ask students to **Raise a Hand** to share their definitions. *Sample: Fuel is something you burn to produce heat or power.*
- Record student definitions and display them. Remind students that they will learn more about these terms throughout the lesson.
- Use **LISTEN FOR** to monitor understanding. Use **Help & Go** scaffolds as needed.
- **LISTEN FOR** Students use background knowledge, titles, photos, and familiar word parts to make sense of the terms.

HELP & GO: Vocabulary

- Remind students to use the titles and photographs to look for clues about the meaning of the terms.
- Encourage students to look inside the word for familiar prefixes (*non-*, *re-*), suffixes (*-able*), and base words (*new*, *source*).
- Encourage students to look inside the word for word parts that are cognates in their home language. **EL**

Each lesson begins with an activity that builds **concept vocabulary**. This helps activate students' knowledge before reading the text.

Help & Go scaffolds provide opportunities for students to explore networks of conceptually related vocabulary words and definitions.

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LESSON 19 | Sources of Energy

1 Support Reading

- Set a purpose for reading. **Say**, *In this text, you will read to learn about the history of energy. Use the time line and bar graph to help you understand the text.*
- Have students read paragraphs 1 and 2. Have them circle unknown words and mark confusing parts with a question mark.
- Preview the images in the time line and have students share what they know about fire and fuel. **EL**
- Use **CHECK INs** and related **Help & Go** scaffolds as needed to support understanding of the text. Monitor based on annotations, observation, and your knowledge of students.
- **CHECK IN** Students understand the content vocabulary word *fuel* and time-order words.

HELP & GO: Vocabulary

- Clarify the meaning of *fuel* in paragraphs 1 and 2. **Ask**, *What does the text say about fuel? You need fuel to make a fire. People burned wood, oil, and dung as fuel. What is fuel? something you burn to make fire*
- Clarify phrases that show time: *for thousands of years, for as long as, for a long time.* **EL**

2 Stop & Discuss

- Have students **Turn and Talk** to complete the **Stop & Discuss**.
- **LISTEN FOR** People looked for fuels they could burn to cook, stay warm, and create light. People looked for new fuels when one ran out.

HELP & GO: Comprehension

- **Say**, *Reread paragraphs 1 and 2. Why did people need fuel? to make fire and use its energy to cook food, stay warm, and light up the dark What did people burn as fuel? wood, oil, dung, and coal Why did people look for a fuel they could use instead of wood? They had cut down too many trees.*

Texts are chunked into **manageable parts**.

After students read a chunk of text, they are given opportunities to **Stop & Discuss**. Students discuss the question with partners.

SESSION 1 READ

First Came Fire

A Story of Energy and Fuel

by Jessica Miller

source = where something comes from
dung = animal waste

2 Stop & Discuss

Why did people look for fuels?

Underline details that tell why people looked for fuels. Discuss the details with your partner.

- 1** People have used fire for thousands of years to cook food, stay warm, and light up the dark. Fire is a powerful **source** of energy. But to make fire and use its energy, you need a fuel. So, for as long as people have been using fire, they have been looking for fuel.
- 2** People found that certain types of materials, such as wood, oil, and animal **dung**, could be burned as fuel for a fire. For a long time, wood was the main source of fuel for many people. But as more and more trees were cut down, people searched for other fuels and, finally, found something deep underground: coal.

FUEL USE

More than 400,000 years ago

People begin to control fire and use it for heat, light, and cooking. People use fuel such as wood and dried dung, or animal poop.



1500s

Coal replaces wood as fuel in parts of Europe. As time goes on, coal is used by more and more people.



More than 3,000 years ago

Coal is first used in China.

1821–1859

First successful natural gas well is dug (1821) and first oil well is drilled (1859) in the United States.

3

3 Coal is a fuel that looks like hard black lumps of rock. It formed over millions of years from dead plants that got buried under layers of dirt and rock. Pound for pound, coal gives off more energy when it is burned than wood does, and it burns longer, too. Coal continues to be used to heat homes, as well as to power engines and generate, or make, electricity.

4 Natural gas and petroleum are other fuels that formed over millions of years from living things that died. In the 1850s, people in the United States started using petroleum, also called oil. Gasoline, which powers many cars and trucks, is made from oil.

5 Over time, scientists have learned that fuels such as coal and oil have **disadvantages**. Burning them pollutes the air, and they can't be replaced once they're used up. So, more and more people are turning to different sources of energy to power their homes, vehicles, and machines.

LESSON 19

disadvantage = problem; a thing that causes difficulty

4

RI.4.3

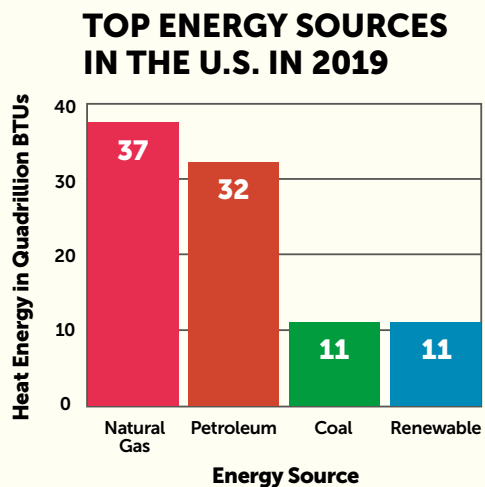
Stop & Discuss

How is coal helpful?
How is it harmful?

Underline one way coal is helpful and one way it is harmful.

1880s

First electricity plants are built. The plants are fueled by coal. Electricity is used for lighting and for powering trains and other vehicles.



3 Support Reading

- Have students read paragraphs 3–5 and the time line.
- **CHECK IN** Students understand the phrase *pound for pound* and key content words.

HELP & GO: Vocabulary

- Read aloud the sentence in paragraph 3 that begins with *Pound for pound*. Explain that this phrase is an idiom used to compare one thing with another. **Ask**, *What two things are compared? a pound of coal and a pound of wood* **Ask**, *What does the comparison help you understand? A pound of coal gives off more heat and burns longer than a pound of wood.*
- Have students identify Spanish cognates: *generate* (*generar*), *disadvantage* (*desventaja*). **EL**

Help & Go scaffolds are designed to be used strategically and as needed while students are reading the text.

4 Stop & Discuss

- Have students **Turn and Talk** to complete the **Stop & Discuss**.
- **LOOK FOR** Students underline relevant details.

HELP & GO: Comprehension

- Have students reread paragraphs 3 and 4. **Ask**, *Why do people use coal instead of wood? Coal burns longer and gives off more heat. What do people use coal for? to heat homes and generate electricity*
- Have students reread paragraph 5. Clarify that *turning to* means people are starting to use something different. **Ask**, *Why are people looking for different sources of energy? Burning coal pollutes the air. It can't be replaced once it's used up.*
- Provide sentence frames for discussion: *Coal is helpful/harmful because ___.* **EL**

Students discuss the Focus Question as a **whole class** at the end of each reading.

Discuss the Whole Text

Use **Pass It On** with the whole class to revisit the Focus Question: *Why have people used energy from different sources?* Record responses for students to reference later.

Graphic organizers provide a transferable framework for unpacking and analyzing the text.

Reconnect to the Text

Have students **Raise a Hand** to recall “First Came Fire: A Story of Energy and Fuel.” **Ask**, *What is energy? What are some kinds of fuel?*

1 Introduce the Standard

- Use **Jump in Reading** to have students read the introduction.
- Have students share ideas about what is shown in the time line and bar graph in “First Came Fire.”
- Explain that readers interpret the visuals in a text and use the information to better understand the topic.
- Ask students to use cognates to understand academic terms (*visuales, línea, gráfico*). **EL**

2 Reread/Think

- **MODEL THE STANDARD** Use the bar graph to model how to interpret information in a visual and connect it to information in the text.
 - **Say**, *Paragraph 3 says people still use coal, but the bar graph tells more about energy sources today. The height of the bars helps me to compare the energy sources. The bars for “Coal” and “Renewable” are the same height, so those sources are used the same amount. Petroleum and natural gas have longer bars, which shows those sources are used more.*

- **GUIDE STANDARDS PRACTICE** Have partners reread paragraphs 2–4 to complete the chart using information from both the text and the visuals.
 - **Ask**, *What information does paragraph 2 provide about wood? Wood was the main source of fuel for a long time. What additional information can you find about wood in the time line? The time line is more specific: People burned wood 400,000 years ago.*

- **3** Guide students to look for information about coal and petroleum in the text and the visuals.

SESSION 2 PRACTICE

RI.4.7 Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, time lines . . .) and explain how the information contributes to an understanding of the text in which it appears.

Interpret Visual Information

- **1** **Visuals** such as time lines and bar graphs can help show information and explain ideas in a text.
 - A **time line** shows the dates of important events in the order they happened.
 - A **bar graph** shows amounts or numbers of items in different categories.

2 Reread/Think

How have wood, coal, and oil been used as fuel over time? Reread “First Came Fire: A Story of Energy and Fuel” and complete the chart with information from both the visuals and the text.

Fuel	Information from the Text	Information from the Visuals
wood 3	(para. 2) for a long time was main source of fuel for fire	(time line) used more than 400,000 years ago as fuel for fire
coal	(para. 2) after a long time, people found coal (para. 3) burned; used to heat homes, power engines, generate electricity	(time line) • 3,000 years ago in China • 1500s: replaced wood in Europe • 1880s: first electricity plants (bar graph) 2019: used less than petroleum and natural gas
petroleum (oil)	(para. 4) • U.S. started using oil in 1850s • used to make gasoline	(time line) 1859: first oil well, U.S. (bar graph) second-most-used energy source in the U.S. in 2019

Teaching protocols that **validate and affirm cultural behaviors** are used to structure activities.

Teacher modeling supports students as they work with and practice the Focus Standard.

Students reread and complete a chart to scaffold their learning.

LESSON 19

4 Talk

How have wood, coal, and oil been used as fuel over time?

- Talk about what you have learned using information from both the text and the visuals.
- Explain how the visuals helped you better understand the topic.

The text says ____.
The time line explains ____.
The bar graph shows ____.

Long ago, ____.
Now ____.

5 Write

How has coal been used over time? Use information from the text and the visuals to support your response.

Sample response: People have burned coal to create heat

and cook food. The time line shows that coal was first used

in China 3,000 years ago. Then, in the 1500s, coal replaced

wood as fuel in parts of Europe. In the 1880s, the first

electricity plants were fueled by coal. Today, coal is still

burned to heat homes, power engines, and generate

electricity. But the bar graph shows that in 2019, coal was not

the main source of energy in the United States. Now coal is

used less than petroleum and natural gas and as much as renewable resources.

People are looking for new sources of energy that don't pollute or run out.

WRITING CHECKLIST

- I explained how coal has been used over time.
- I included information from the text, time line, and bar graph.
- I used complete sentences.
- I used correct spelling, punctuation, and capitalization.

4 Talk

- Have students use **Give One, Get One** to complete the Talk activity. Students can talk about wood with their first partner, coal with their second partner, and petroleum with their third partner.
- Tell partners to share one thing they learned from the text and one thing they learned from the time line or bar graph.
- Then have partners work together to summarize what they learned about how the fuel was used long ago and how it is used now.
- **LISTEN FOR** Students use the text, time line, and bar graph to identify information about energy over time. ✓

HELP & GO: Standards Practice

- **Say**, *Paragraph 3 explains how coal is used to heat homes, power engines, and generate energy. What additional information does the time line give about coal? The time line says that coal was first used in China more than 3,000 years ago, and that in the 1500s, coal replaced wood as fuel in parts of Europe.*

- After students complete the activity, use **Pick a Stick** to have 2–3 students share what they learned with the whole class.
- **Ask**, *Why do you think the author used a time line? The time line summarizes the history of fuel. It shows it in an easy-to-understand way.*

5 Write

- Have students complete the Write task and use the checklist to check their work.
- Encourage students to use the sentence frames from the Talk section in their responses. **EL**
- Use written responses to determine whether students need additional support. ✓

Students engage in an **academic discussion** to refine their understanding of the Focus Standard and prepare for the upcoming Write task.

Write prompts include **checklists to encourage self-assessment.**

1 Support Reading

Students engage with a new text as they build knowledge on the lesson topic.

- Set a purpose for reading. **Say**, *In this session, you will read to learn more about sources of energy. Look for new information in the text and visuals.*
- Have students read paragraphs 1–4. Have them circle unknown words and mark confusing parts with a question mark.
- Use **CHECK INs** and related **Help & Go** scaffolds as needed.
- **CHECK IN** Students understand informal language and multiple meaning words such as *cool*, *turns*, and *runs*.

Respond to individual needs with targeted strategies, using the embedded **Help & Go scaffolds**.

HELP & GO: Vocabulary

- Ask students to explain the meaning of informal language: *cool*, *nope*. **EL**
- Have students reread paragraphs 2 and 3 and explain the meaning of *turns* and *runs* as used in the phrases *turns . . . into* (*changes . . . into*) and *runs on energy* (*uses energy to go*). Have them practice using the phrases in their own sentences.

2 Stop & Discuss

Stop & Discuss prompts provide strategic scaffolds for English Learners and are embedded throughout the reading.

- Have students complete the **Stop & Discuss** and then **Turn and Talk**.
- **LOOK FOR** Students underline details about what uses energy from the sun.

HELP & GO: Comprehension

- Have students reread paragraphs 3 and 4. **Ask**, *What grew with energy from the sun? plants When does your body use energy from the sun? when you eat plants or food made from plants What runs on energy from the sun? vehicles What do vehicles use that the sun helped make? fuel*
- Explain that in paragraph 4 the author asks a series of questions about fuel that will be answered in the next section.



- 1 True or false: The energy you used to get dressed and go to school this morning came from the sun.
- 2 It's . . . TRUE! Let's think more about this idea.
- 3 Suppose you had orange juice and cereal for breakfast. The fruit in your juice and the grains in your cereal come from plants. The plants grew with energy from the sun. When you eat plants or food made from plants, your body turns that food into energy it can use to do things like get dressed.
- 4 But your body is not the only thing that uses energy from the sun. The bus or car you rode to get to school also runs on energy from the sun. So do trains, ships, and airplanes. Do these vehicles use sunbeams for fuel? Not at all. Rainbows? Cool idea, but nope. To understand the sun's role in making the fuels of today, we need to know what was happening on Earth about 300 million years ago.

role = job that something does

2

RI.4.1

Stop & Discuss

What uses energy from the sun?

Underline two examples of things that use energy from the sun.

Embedded definitions allow for fluent reading as students access ideas.

3

- 5 Back then, before dinosaurs lived, plants grew all over Earth. These plants used energy from the sun to make food for themselves, which helped them grow. But once the plants and other living things died, sand and clay covered them, slowly turning to rock. Over time, more and more layers of rock formed over the dead things. The crushing weight of all this rock squeezed the dead material. Then, over millions of years, heat and the pressure from all that rock turned the dead material into fossil fuels.
- 6 Fossil fuels come in three forms: a black rock called coal, a black or brownish liquid called petroleum (oil), and a clear gas called natural gas. (If fossil fuels are rocks, liquid, and gas, why are they called *fossil* fuels? Well, just like fossils, they come from things that lived long ago.)
- 7 Some power plants use fossil fuels to make electricity, and people still burn fossil fuels to heat their homes. Gasoline, which is made from oil, powers most of the cars, buses, trains, and airplanes we use to travel. All these fossil fuels we burn come from plants that grew millions of years ago using energy from the sun.

LESSON 19

4

RI.4.1

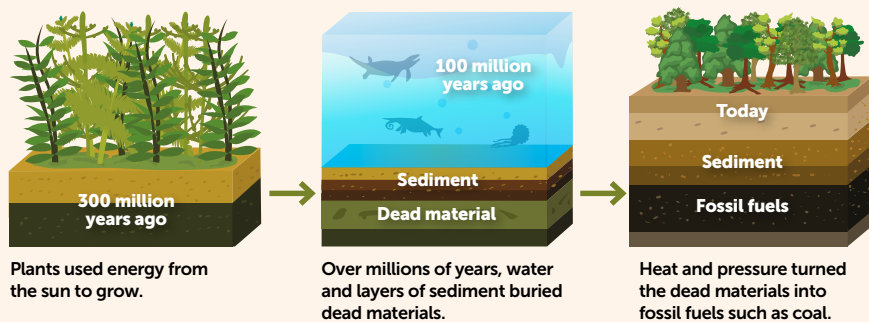
Stop & Discuss

Which statement would the author agree with?

- Fossil fuels form slowly, but people use them a lot.
- Fossil fuels form quickly, and people use them a little.

Explain your choice to a partner.

HOW FOSSIL FUELS WERE FORMED



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LESSON 19 | Sources of Energy

3 Support Reading

- Have students read paragraphs 5–7 and the diagram.
- CHECK IN** Students understand multiple-meaning words and key vocabulary, such as *formed* and *pressure*.

HELP & GO: Vocabulary

- Guide students to look around the word to identify context clues for *formed* and *pressure* in paragraph 5. *formed*: *slowly turning to rock*; *pressure*: *crushing weight of all this rock squeezed*
- Have students share their understanding of multiple-meaning words and phrases: *plants*, *power plants*; *powers*; *formed*, *forms*. Help them clarify the meaning of these words in context. **EL**

Check Ins and Look Fors help teachers determine whether to use one of the Help & Go scaffolds provided on this page.

4 Stop & Discuss

- Have students complete **Stop & Discuss** independently, then **Turn and Talk**.
- Provide sentence frames for discussion, such as *The author would agree/not agree with ___ because the text says ___*. **EL**
- LOOK FOR** Students understand that fossil fuels form slowly but people use them a lot.

HELP & GO: Comprehension

- Have students reread paragraph 5. **Ask**, *How long did it take to turn the dead material into fossil fuels? millions of years*
- Have students reread paragraph 7. **Ask**, *How do people use fossil fuels? to make electricity, heat homes, and power vehicles What phrase in the last sentence gives you a clue about how much fossil fuel people use? "All these fossil fuels" suggests a lot.*
- Have students **Shout Out** which statement they chose. Then use **Pick a Stick** to have one or two students share their thinking and evidence with the group.

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LESSON 19 | Sources of Energy

5 Support Reading

- Have students read paragraphs 8–10 and the chart.
- **CHECK IN** Students understand *renewable* and *nonrenewable*.

HELP & GO: Vocabulary

- Guide students to look inside the word *renewable* for familiar prefixes and suffixes.
- Guide students to look around the word *nonrenewable* for clues. *not last forever; millions of years to be replaced*

6 Stop & Discuss

- Have students **Turn and Talk** to complete **Stop & Discuss**.
- Have students rephrase the question. **EL**
- **LISTEN FOR** Students understand that *nonrenewable resources* pollute and will run out, while *renewable resources* do neither.

HELP & GO: Sentence Comprehension

- **Say**, *In paragraph 8, what does “they” refer back to in the second sentence? the fossil fuels: petroleum, coal, and natural gas* What do you learn about fossil fuels? *They take millions of years to be replaced, are nonrenewable, and create pollution.*

Discuss the Whole Text

- Use **Pass It On** to revisit the Focus Question. Students can give one example from the text on each turn.
 - **Ask**, *What are the three forms of fossil fuels, and how do people use them?*
 - **Ask**, *What three renewable resources are mentioned, and why do people use them?*
- Record and display responses next to those recorded for the first text.




SESSION 3 READ

- 5 8 Today, more than 80% of the world’s energy still comes from fossil fuels. But petroleum, coal, and natural gas will not last forever, and they take millions of years to be replaced. They are nonrenewable resources. They also create pollution, which harms human health and the environment. So, people must find **alternative** sources of energy.
- 9 Renewable resources are one option. Renewable energy sources, such as **solar energy**, wind energy, and hydropower (water power), do not create pollution and they will not run out. When it is cloudy or calm, we don’t have to wait long for more sun and wind. At least not as long as the millions of years it would take for dead animals or plants to turn into oil or coal!
- 10 People have explored different ways to use energy from natural resources for centuries. And every new discovery has had a huge effect on the way people live. What will the energy of the future be?

alternative = different

solar energy = energy from the sun

RENEWABLE RESOURCES

ENERGY SOURCE	DESCRIPTION
 Solar	<ul style="list-style-type: none"> • Energy from sunlight • Can be turned into electricity or heat • Heats buildings, warms water, powers vehicles and tools
 Wind	<ul style="list-style-type: none"> • Energy from moving air (wind) • Can be used to generate electricity • Wind turns the blades of a turbine. The turbine spins a generator, which generates electricity.
 Hydropower	<ul style="list-style-type: none"> • Energy from moving water • Can be used to produce electricity • Flowing water turns a turbine to spin a generator, which generates electricity.

6 RI.4.1 Stop & Discuss

What is the difference between renewable and nonrenewable resources?

Use details and examples from the text and chart to support your answer.

Renewable resources are different because ____.

RI.4.7 Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, time lines . . .) and explain how the information contributes to an understanding of the text in which it appears.

1 Interpret Visual Information

- A **diagram** is a drawing or picture that explains what something looks like or how it works. A diagram can help explain a complicated idea.
- A **chart** organizes information in a way that makes it easier to find and understand.

2 Reread/Think

How is the sun connected to the fossil fuels we use today? Reread “What Makes It Go?” Complete the chart with information from the text and the diagram on page 373 that will help you answer the question.

Information from the Text	Information from the Diagram
<p>(paragraph 5)</p> <ul style="list-style-type: none"> • Plants grew using energy from the sun before dinosaurs lived. • Sand and clay covered dead things and turned to rock. • Over time, more layers of rock formed above the dead material and squeezed it. • Over millions of years, heat and pressure turned the dead material into fossil fuels. 	<ul style="list-style-type: none"> • Arrows and captions show fossil fuels took 300 million years to form. • Section 1: 300 million years ago, plants grew using energy from the sun. • Section 2: Picture, labels, and caption show water + sediment buried dead materials. • Section 3: Heat and pressure turned dead material into fossil fuels.

Reconnect to the Text

Have students **Raise a Hand** to recall “What Makes It Go?” **Ask**, *What are examples of fossil fuels and renewable resources?*

1 Practice the Standard

- Ask students to look at the visuals in the text and match them with the academic terms. (*diagram, chart*) Explain that this type of chart is also called a *table*. **EL**
- Have students **Turn and Talk** about what the chart and diagram show and how they organize information.

2 Reread/Think

MODEL THE STANDARD Model how to understand information in a visual. Have students **Shout Out** answers to questions below.

- **Ask**, *Which visual will help you answer the question How is the sun connected to the fossil fuels we use today?* *diagram*
- **Say**, *On page 373, the diagram “How Fossil Fuels Were Formed” shows a process over time. Arrows connect one part of the process to the next. In the first section, the label “300 million years ago” tells me when fossil fuels started forming. It also lets me know that each arrow represents a very long time. What do the picture and caption show about how fossil fuels started?* *started as plants*

GUIDE STANDARDS PRACTICE Have students complete the graphic organizer.

- **Say**, *Use information from the captions and labels to understand what each picture shows about how fossil fuels were made and how this connects to the sun.*
- **Ask**, *How does the first step in the diagram connect to the sun?* *Plants grew using energy from the sun.*
- Read aloud paragraph 5 to students and have them say or write their own captions for each picture in the diagram. **EL**

Embedded engagement protocols vary the way that students engage and respond during activities.

Repeated use of the **Reread/Think, Talk, Write routine** guides students to critically analyze texts and process their understanding through structured discussion and writing.

3 Talk

- Have students use the sentence frames to **Turn and Talk** to respond to the Talk question.
- Use **Help & Go** scaffolds as needed.
- **LISTEN FOR** Students explain information clearly about how the diagram helped them understand more about the way fossil fuels formed. ✓

HELP & GO: Academic Discussion

- If a student's explanation is unclear, you might ask the student to reword it with more precise academic language or help them to do so.

Sentence starters model the language needed to talk and write about texts as students practice the Focus Standard.

4 Write

- Remind students that their response should be supported with information from the diagram and the text.
- Have students **Turn and Talk** before they write. **EL**
- Have students work independently to complete the Write activity.
- **LOOK FOR** Students interpret the diagram and explain how its visuals and text helped them understand how fossil fuels formed.

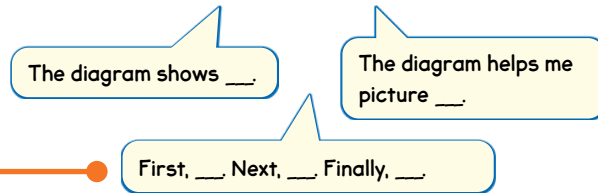
HELP & GO: Writing

- Encourage students to use sentence frames from the Talk activity to help them write their responses.
- Have students share their work using **Musical Shares**.
- Use written responses to determine whether students need additional support. ✓

SESSION 4 PRACTICE

3 Talk

How did the diagram help you understand more about how fossil fuels were formed? Share the information from your chart with a partner. Listen to your partner's information.



4 Write

How were fossil fuels formed? Use information from the text and diagram to support your response.

Sample response: The text explains that fossil fuels took millions of years to form. First, plants and other living things died and were covered by sand and clay. Next, the sand and clay turned to rock. Then, more layers of rock formed. Finally, heat and pressure turned the dead material into fossil fuels. The diagram shows how fossils fuels started forming 300 million years ago. Each picture shows the layers of plants, living things, and sediment during each step in the process. The arrows and captions explain that each picture shows what happened at a different time.

WRITING CHECKLIST

- I explained how fossil fuels formed.
- I included information from the text and the diagram.
- I used complete sentences.
- I used correct spelling, punctuation, and capitalization.

SESSION
5 READ

LESSON 19

COOL SOLUTIONS:
TRASH TO GAS

by Danielle Jansen

1

- 1 Lunch is almost over. You crunch into the last morsel of your apple. Then you toss your apple core into the trash bin. In a week or two, this trash will be dumped in a landfill, where the trash will remain.
- 2 In the United States, people throw away tons and tons of waste every year, and most of it goes to landfills. Can you guess the most common type of waste at landfills? It's not plastic, and it's not paper—it's food!
- 3 Food is a kind of organic waste. Organic waste is plant or animal material that breaks down over time. This waste takes up a lot of space in landfills, but imagine if it could be turned into something useful, instead of sitting in a landfill, left there to rot.
- 4 Sweden has thought of one solution. In 2005, the country **banned** organic waste in landfills. What does Sweden do with all this organic waste, then?

banned = stopped allowing

Reconnect to the Texts

Display responses to the Focus Question for “First Came Fire: A Story of Energy and Fuel” and “What Makes It Go?” Have students **Raise a Hand** to make connections between the two texts.

1 Independent Reading

- **Note:** The text describes how poop is recycled. Some students may giggle as they read.
- **Say,** *You will read a text and answer questions about the diagram. Stop at the end of each page to ask yourself questions about the text.*
- If students need more support, work with them in small groups.
- Use **CHECK INs** and related **Help & Go** scaffolds as needed.
- **CHECK IN** Students understand the meaning of *morsel*, *waste*, and *break down*.

HELP & GO: Vocabulary

- Remind students to look around the word for clues to the meaning of words in paragraphs 2–4: *morsel* (last morsel of your apple), *waste* (throw away), and *break down* (rot, produce gas).
- Encourage students to look for words with cognates in their home language: *organic* (*orgánico*). **EL**

Session 5 gives students an **opportunity to engage independently** with a new text.

Suggestions are provided for students who are not quite ready for reading independently.

2 Independent Reading

- **CHECK IN** Students understand that organic waste can be used for fuel instead of sitting in landfills.

HELP & GO: Comprehension

- Have students reread the diagram. **Ask**, *What is used to make biogas? organic waste* *What is biogas used for? fuel* *How does the diagram connect to paragraph 3? Using organic waste to make biogas is better than having it sit in a landfill.*
- **CHECK IN** Students understand that *it* in paragraph 7 refers to the process described in paragraph 6 of turning poop into fuel.

HELP & GO: Sentence Comprehension

- In paragraph 7, clarify that *it* in *Here's how it works* refers to an idea in paragraph 6: recycling waste that gets flushed down the toilet.
- In paragraph 6, point out the colon at the end of the phrase *Here's how it works*. **Say**, *The colon shows that the text that comes after "Here's how it works" will explain how something works. What does the text that comes after the colon explain? The text explains how the waste flushed down the toilet goes to the treatment plant to get turned into fuel.*
- **CHECK IN** Students understand that people recycle human waste to make biogas that can be used as fuel.

HELP & GO: Comprehension

- Point out the question *Why poop?* in paragraph 6. **Ask**, *What answer does the author give to that question? When poop breaks down, it can create biogas.*
- **Say**, *Reread paragraph 7. What do people make out of biogas? fuel*
- Check that students understand and can paraphrase why people recycle human waste: bacteria can break it down into biogas (bi-o-gas). Biogas can be used as fuel. **EL**

SESSION 5 READ

2 HOW BIOGAS IS MADE



- 5 The waste is taken to a plant, a place where something is produced. At the plant, waste is broken down by tiny living things called bacteria. When bacteria break down the waste, they produce biogas. Biogas can be used as a fuel to power cars, buses, and other vehicles. In fact, this biogas powers more than 200 city buses in Sweden!
- 6 But people don't stop at recycling food waste. Some have also developed plants that reuse animal manure from farms or human waste (poop) that gets flushed down the toilet. Why *poop*? Well, when poop breaks down, it can also create biogas!
- 7 Here's how it works: The waste that people flush down the toilet travels to a treatment plant. There, the waste is separated from water. Machines take this waste, remove and clean the water, and then release the water into the sea. What's left is lots of thick muddy stuff called sludge. As the sludge breaks down, it makes biogas. The treatment plant uses biogas to make fuel for vehicles.
- 8 People are still looking for new ways to use waste, and maybe one day, all our trash will skip the landfill and become fuel.

SESSION 5 PRACTICE

RI.4.7 Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, time lines . . .) and explain how the information contributes to an understanding of the text in which it appears.

LESSON 19

3 Respond to Text

Reread/Think

Reread "Cool Solutions: Trash to Gas." Choose the best response to each question.

- Which information from the text is also in the diagram on page 378?
 - Organic waste takes up a lot of space in landfills.
 - Machines separate human waste from water.
 - Biogas can be used as a fuel to power cars, buses, and other vehicles.
 - The waste people flush down the toilet travels to a treatment plant.
- What does the word *common* mean as it is used in paragraph 2?
 - belonging to all
 - appearing a lot
 - simple
 - general
- Write an **X** in the box next to each detail to show whether it describes information in the text, information in the diagram, or information in both the text and the diagram.

	Text	Both	Diagram
The waste is taken to a power plant.	X		
The organic waste goes in a big tank.			X
Biogas is turned into fuel for vehicles.		X	

3 Reread/Think

- Have students complete the Reread/Think items independently.
- Check that students understand that *human waste* is a more formal way of saying *poop*. **EL**

Answer Analysis

After students complete the independent practice, have them use **Shout Out** to share their responses to each item. Use the answer analysis below to clarify ideas. ✓

- The correct choice is **C**. This is the best choice because it is the only piece of information from the text that is supported by the diagram. This idea is expressed in paragraph 5 and in the last section of the diagram. Choice **A** does not appear in the diagram. Choices **B** and **D** provide information about human waste, which is not what the diagram shows. **DOK 1 | RI.4.7**
- The correct choice is **B**. This is the best choice because the text uses the word *common* to describe the type of waste that is most often found in landfills. Choices **A**, **C**, and **D** describe other meanings of the word *common*. **DOK 2 | RI.4.4**
- See answers on the student book page. **DOK 2 | RI.4.7**

Answer Analysis provides teachers with guidance for identifying correct answer choices and understanding incorrect answer choices.

Students demonstrate their understanding of the **Focus Standard** by applying it to the text they have read, providing teachers with valuable formative assessment.

The **DOK Levels** are included in the Answer Analysis and Write sections to provide insight into item complexity.

4 **Answer Analysis**

4. The correct choice is **A**. This is the best choice because it shows the steps in the process of changing organic waste into fuel. The diagram does not include the information in choices **B**, **C**, and **D**. **DOK 2 | RI.4.7**

5 **Write**

- Have students respond independently to the writing prompt. **DOK 3 | RI.4.7**
- If needed, provide sentence frames to help students construct responses: *The text gives information about _____. The diagram helps me understand _____.* **EL**

Write prompts allow students to engage in higher-order thinking tasks.

Lesson Wrap-Up guides students to connect what they read independently to the Focus Question as they continue to build knowledge.

● **Lesson Wrap-Up**

- Use **Pass It On** to have students revisit the Focus Question using examples from the text.
 - **Ask**, *Why do people use different types of waste as sources of energy? What do they use it for?*
 - Record and display students' responses next to their responses from the first two texts.

SESSION 5  PRACTICE

4 **Reread/Think**

4. How does the diagram on page 378 help the reader understand paragraph 5?
- A.** It shows the steps organic waste goes through to become fuel.
 - B.** It shows the amount of organic waste needed to make biogas.
 - C.** It shows how long it takes to make biogas with organic waste.
 - D.** It shows how often the big tank is filled with organic waste.

5 **Write**

How do details from both the text and the diagram explain how waste is turned into fuel? Use at least **one** example from the text and **one** from the diagram to support your response.

Sample response: The text gives details about the process of turning waste into fuel, but the diagram shows pictures of each step in the process. For example, the text explains that waste is taken to a plant where it is broken down by bacteria. The diagram shows a photo of food waste connected to a photo of a huge tank where bacteria break down the waste. That helps me picture the waste, the tank, and the relationship between those two things.

WRITING CHECKLIST

- I answered the question.
- I used at least one example from the text and one from the diagram.
- I used correct spelling, punctuation, and capitalization.



Respond to the Focus Question

Why have people used energy from different sources?

1 Reread/Think

Choose one text from the lesson to reread with a partner.

TEXT: *Sample response: What Makes It Go?*

What is one source of energy that people use, and how have they used it? Why have people used energy from that source?

1. *Sample response: People use wind to generate electricity.*

2. *Sample response: People use wind because it is renewable.*

2 Talk

Share what you learned from the text you reread. Use the sentence frames to get started.

People have used
energy from ___ to ___.

People have used ___ as a
source of energy because ___.

3 Write

Why have people used energy from different sources? Use information from at least two texts in your response.

Respond to the Focus Question

Read the Focus Question. Tell students that today they will answer the question using information from all three texts.

1 Reread/Think

- Have partners reread one text and complete the Reread/Think section. Ask them to mark one interesting fact in the text and think of one question they still have.
- Remind students to use the visuals.

2 Talk

- Have students **Raise a Hand** to share an interesting fact from the text or a question they still have.
- Then use **Compare and Connect** to guide a whole-class discussion. **Ask**, *What energy sources did we read about? How are they alike? How are they different?*

3 Write

- Have students respond independently to the prompt.
- Encourage students to use the sentence frames from the Talk section to help them write their responses. **EL**
- Use **Help & Go** scaffolds as needed.
- **LOOK FOR** Students use information from two texts to answer the question *Why have people used energy from different sources?*





HELP & GO: Writing

- Have students complete the activity as a partner-writing activity. **EL**
- Guide students to create their own writing checklists.

Culminating lesson activities allow students to **synthesize the knowledge they have built** as they respond to the Focus Question.

i-Ready Learning
Magnetic Reading™

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