INTEGRATE Language and **Mathematics**

The Try-Discuss-Connect Framework incorporates language routines, teacher moves, and conversation tips. Targeted support helps address the language demands for reading, writing, speaking, and listening.

SUPPORTS FOR LANGUAGE DEVELOPMENT

TRY IT

Language Routines
- Three Reads
- Co-Craft Questions
- Notice and Wonder
- Say It Another Way

Teacher Moves
- Turn and Talk
- Individual Think Time

DISCUSS IT

Language Routines
- Compare and Connect
- Collect and Display

Teacher Moves
- Turn and Talk
- Individual Think Time
- Four Rs

Conversation Tips

CONNECT IT

Language Routines
- Collect and Display
- Compare and Connect

Teacher Moves
- Turn and Talk
- Individual Think Time
- Four Rs

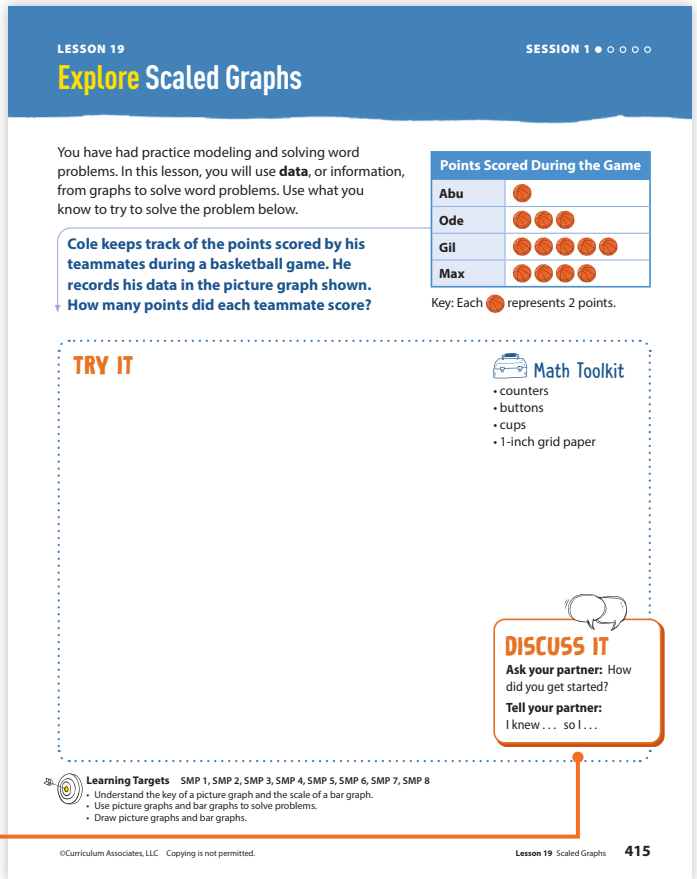
Language Routines

To make sure students understand the problem, use a language routine such as **Three Reads**. In this routine, students read a word problem three times, each time with a specific focus:

- **Read 1:** *What is the problem about?*
- **Read 2:** *What are we trying to find out?*
- **Read 3:** *What are the important quantities and relationships?*

Teacher Moves

Use teacher moves like Turn and Talk and Individual Think Time to help students develop their ideas and increase participation in discussion.



LESSON 19 SESSION 1 ● ○ ○ ○ ○

Explore Scaled Graphs

You have had practice modeling and solving word problems. In this lesson, you will use **data**, or information, from graphs to solve word problems. Use what you know to try to solve the problem below.

Cole keeps track of the points scored by his teammates during a basketball game. He records his data in the picture graph shown. How many points did each teammate score?

Points Scored During the Game	
Abu	🏀
Ode	🏀🏀🏀
Gil	🏀🏀🏀🏀🏀
Max	🏀🏀🏀🏀

Key: Each 🏀 represents 2 points.

TRY IT

Math Toolkit
- counters
- buttons
- cups
- 1-inch grid paper

DISCUSS IT
Ask your partner: How did you get started?
Tell your partner: I knew . . . so I . . .

Learning Targets SMP 1, SMP 2, SMP 3, SMP 4, SMP 5, SMP 6, SMP 7, SMP 8
- Understand the key of a picture graph and the scale of a bar graph.
- Use picture graphs and bar graphs to solve problems.
- Draw picture graphs and bar graphs.

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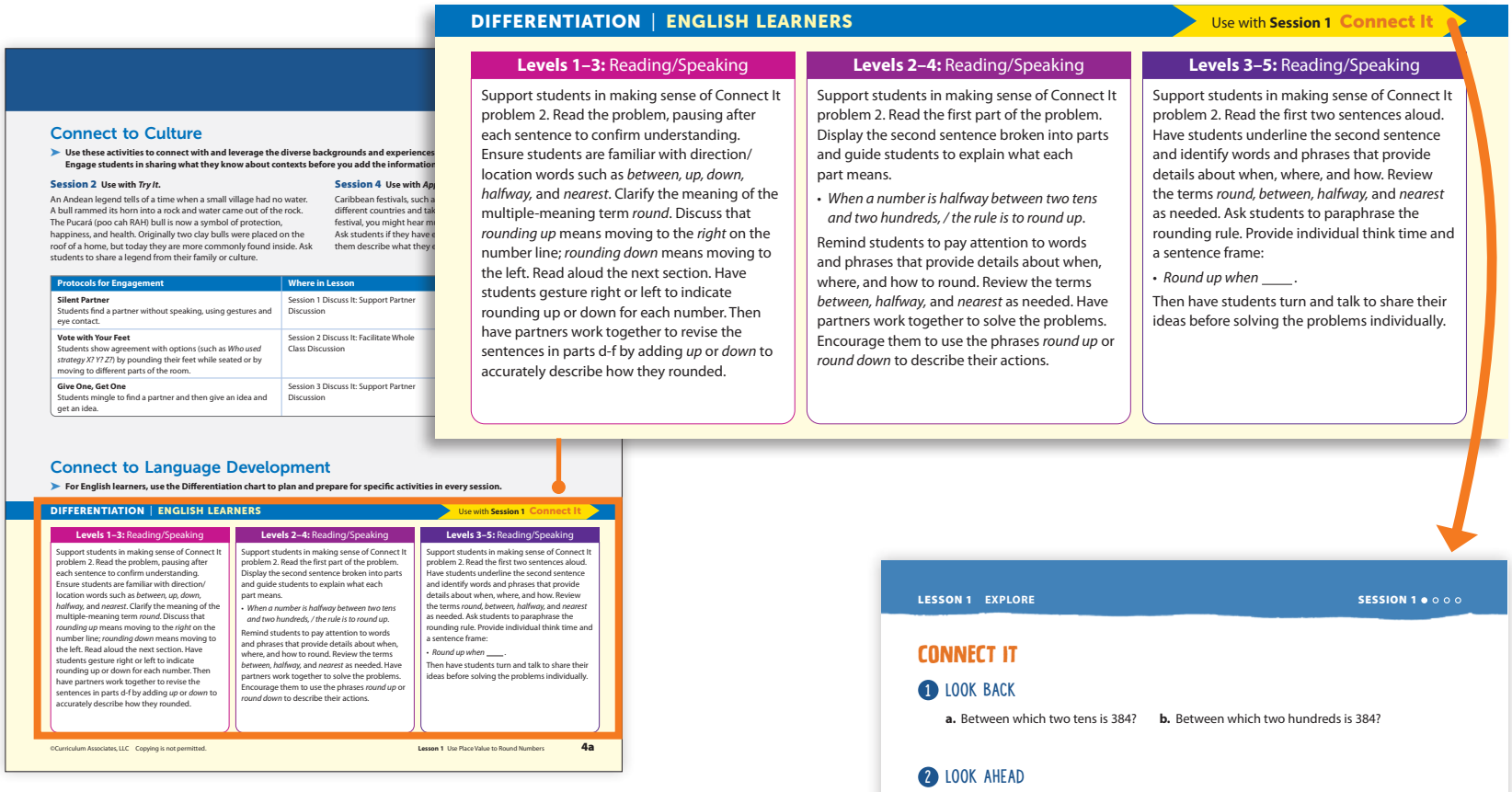
Differentiated Instruction for English Learners

Every session includes differentiated support for a continuum of English proficiency levels.



Connect to Culture

➤ **Use these activities to connect with and leverage the diverse backgrounds and experiences**
Engage students in sharing what they know about contexts before you add the information

Session 2 Use with *Try It.*

An Andean legend tells of a time when a small village had no water. A bull rammed its horn into a rock and water came out of the rock. The Pucará (poo cah RAH) bull is now a symbol of protection, happiness, and health. Originally two clay bulls were placed on the roof of a home, but today they are more commonly found inside. Ask students to share a legend from their family or culture.

Session 4 Use with *Ap*

Caribbean festivals, such a
different countries and tak
festival, you might hear m
Ask students if they have e
them describe what they e

Protocols for Engagement	Where in Lesson
Silent Partner Students find a partner without speaking, using gestures and eye contact.	Session 1 Discuss It: Support Partner Discussion
Vote with Your Feet Students show agreement with options (such as *Who used strategy X? Y? Z?*) by pounding their feet while seated or by moving to different parts of the room.	Session 2 Discuss It: Facilitate Whole Class Discussion
Give One, Get One Students mingle to find a partner and then give an idea and get an idea.	Session 3 Discuss It: Support Partner Discussion

Connect to Language Development

➤ **For English learners, use the Differentiation chart to plan and prepare for specific activities in every session.**

DIFFERENTIATION | ENGLISH LEARNERS Use with **Session 1** Connect It

Levels 1–3: Reading/Speaking

Support students in making sense of Connect It problem 2. Read the problem, pausing after each sentence to confirm understanding. Ensure students are familiar with direction/location words such as *between, up, down, halfway,* and *nearest*. Clarify the meaning of the multiple-meaning term *round*. Discuss that *rounding up* means moving to the *right* on the number line; *rounding down* means moving to the left. Read aloud the next section. Have students gesture right or left to indicate rounding up or down for each number. Then have partners work together to revise the sentences in parts d-f by adding *up* or *down* to accurately describe how they rounded.

Levels 2–4: Reading/Speaking

Support students in making sense of Connect It problem 2. Read the first part of the problem. Display the second sentence broken into parts and guide students to explain what each part means.

- *When a number is halfway between two tens and two hundreds, / the rule is to round up.*

Remind students to pay attention to words and phrases that provide details about when, where, and how to round. Review the terms *between, halfway,* and *nearest* as needed. Have partners work together to solve the problems. Encourage them to use the phrases *round up* or *round down* to describe their actions.

Levels 3–5: Reading/Speaking

Support students in making sense of Connect It problem 2. Read the first two sentences aloud. Have students underline the second sentence and identify words and phrases that provide details about when, where, and how. Review the terms *round, between, halfway,* and *nearest* as needed. Ask students to paraphrase the rounding rule. Provide individual think time and a sentence frame:

- *Round up when ____.*

Then have students turn and talk to share their ideas before solving the problems individually.

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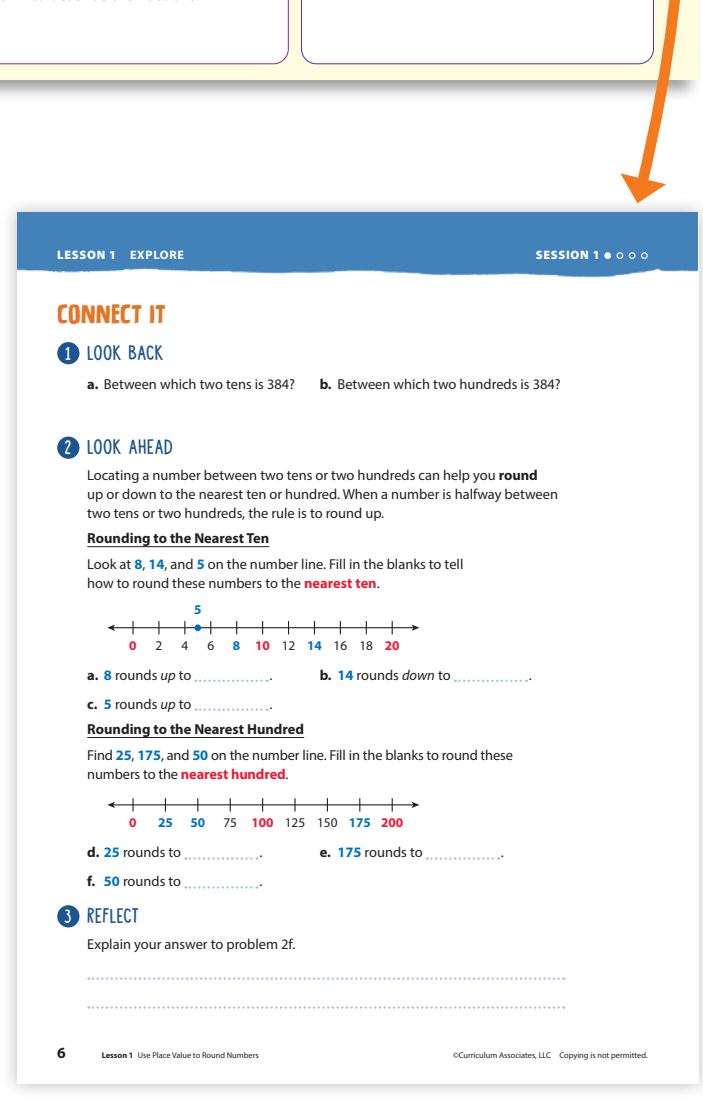

LESSON 1 EXPLORE SESSION 1 ● ○ ○ ○

CONNECT IT

1 LOOK BACK

a. Between which two tens is 384? **b.** Between which two hundreds is 384?

2 LOOK AHEAD

Locating a number between two tens or two hundreds can help you **round** up or down to the nearest ten or hundred. When a number is halfway between two tens or two hundreds, the rule is to round up.

Rounding to the Nearest Ten

Look at **8**, **14**, and **5** on the number line. Fill in the blanks to tell how to round these numbers to the **nearest ten**.

a. **8** rounds *up* to _____. **b.** **14** rounds *down* to _____.

c. **5** rounds *up* to _____.

Rounding to the Nearest Hundred

Find **25**, **175**, and **50** on the number line. Fill in the blanks to round these numbers to the **nearest hundred**.

d. **25** rounds to _____. **e.** **175** rounds to _____.

f. **50** rounds to _____.

3 REFLECT

Explain your answer to problem 2f.

_____

_____

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Differentiation suggestions focus on a specific problem so that teachers can scaffold language, as needed, to ensure that English learners access and engage with the mathematics.

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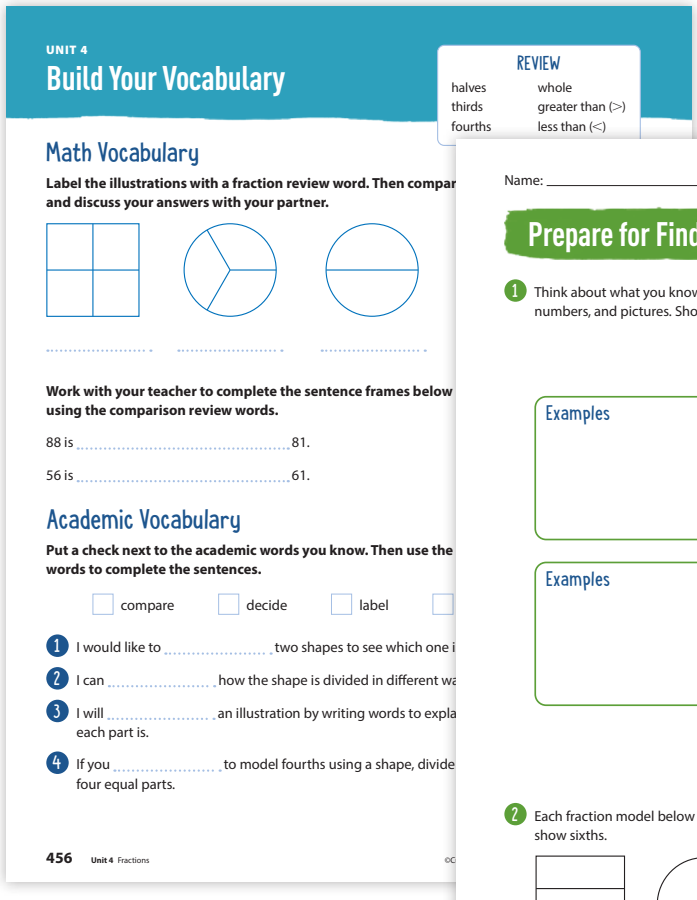
LANGUAGE DEVELOPMENT and **Discourse Support**

Build students' understanding and use of math terms and academic language to deepen their conceptual understanding. *i-Ready Classroom Mathematics* includes activities and support at the word/phrase, sentence, and discourse levels so that all students can engage in rigorous mathematics and communicate effectively.

Word Level

Math terms and academic vocabulary are learned and practiced through routines, activities, and in-context use.



UNIT 4
Build Your Vocabulary

REVIEW
halves, thirds, fourths, whole, greater than (>), less than (<)

Math Vocabulary

Label the illustrations with a fraction review word. Then compar and discuss your answers with your partner.

Work with your teacher to complete the sentence frames below using the comparison review words.

88 is _____ 81.

56 is _____ 61.

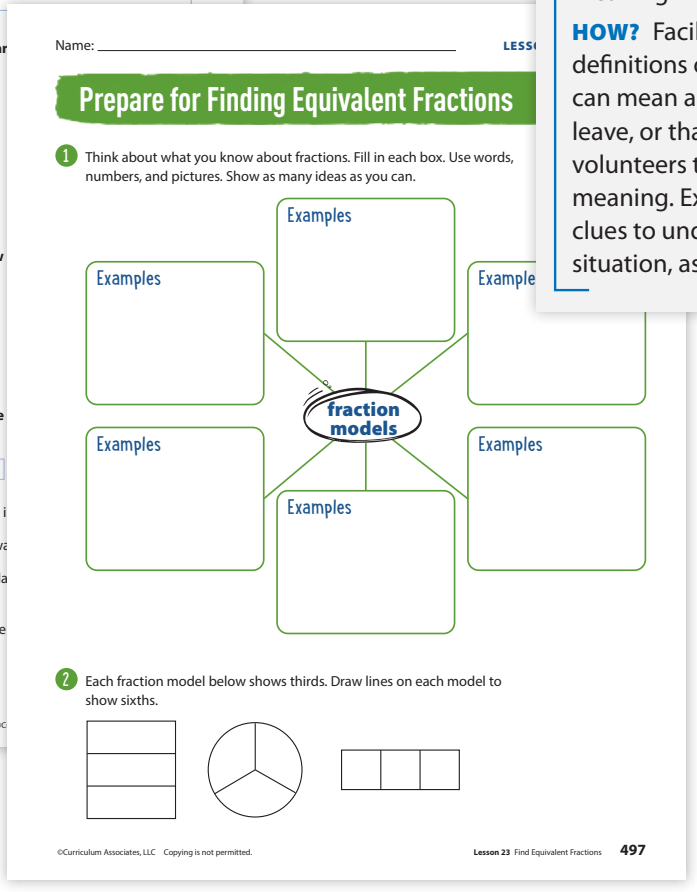
Academic Vocabulary

Put a check next to the academic words you know. Then use the words to complete the sentences.

☐ compare ☐ decide ☐ label

1. I would like to _____ two shapes to see which one i
2. I can _____ how the shape is divided in different wa
3. I will _____ an illustration by writing words to expla each part is.
4. If you _____ to model fourths using a shape, divide four equal parts.

456 Unit 4 Fractions



Name: _____ LESS

Prepare for Finding Equivalent Fractions

1. Think about what you know about fractions. Fill in each box. Use words, numbers, and pictures. Show as many ideas as you can.

Examples, Examples, Example, fraction models, Examples, Examples, Examples

2. Each fraction model below shows thirds. Draw lines on each model to show sixths.

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Lesson 23 Find Equivalent Fractions 497

DEVELOP ACADEMIC LANGUAGE

WHY? Clarify understanding of the multiple-meaning word *left*.

HOW? Facilitate a discussion about the definitions of the word *left*. Affirm ideas that *left* can mean a direction, the past tense of the verb leave, or that something remains unused. Call on volunteers to share examples using each meaning. Explain that readers can use context clues to understand what the word means in the situation, as in the Try It problem.

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Sentence Level

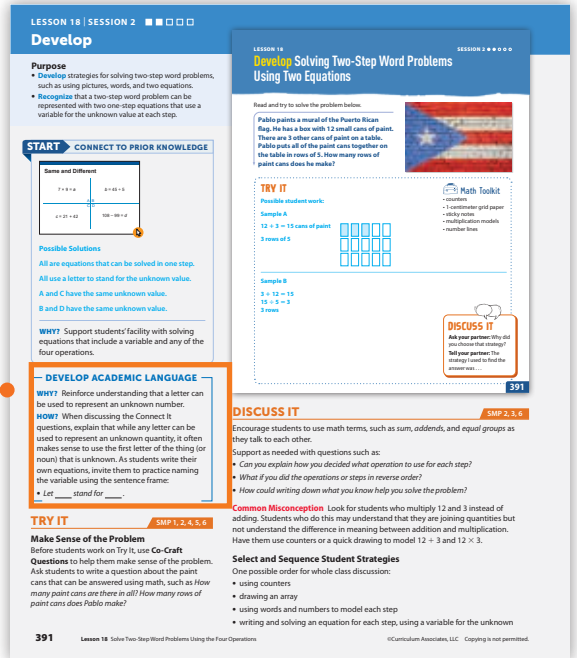
Resources, like the Discourse Cards and the Develop Academic Language tips, help students express ideas in complete sentences with increased detail.

DEVELOP ACADEMIC LANGUAGE

WHY? Reinforce understanding that a letter can be used to represent an unknown number.

HOW? When discussing the Connect It questions, explain that while any letter can be used to represent an unknown quantity, it often makes sense to use the first letter of the thing (or noun) that is unknown. As students write their own equations, invite them to practice naming the variable using the sentence frame:

- *Let ____ stand for ____.*


LESSON 18 | SESSION 2

Develop

Purpose
- Develop strategies for solving two-step word problems, such as using pictures, words, and two equations.
- Recognize that a two-step word problem can be represented with two one-step equations that use a variable for the unknown value at each step.

START CONNECT TO PRIOR KNOWLEDGE

Same and Different

Possible Solutions

All are equations that can be solved in one step.

All use a letter to stand for the unknown value.

A and C have the same unknown value.

B and D have the same unknown value.

WHY? Support students' facility with solving equations that include a variable and any of the four operations.

DEVELOP ACADEMIC LANGUAGE

WHY? Reinforce understanding that a letter can be used to represent an unknown number.

HOW? When discussing the Connect It questions, explain that while any letter can be used to represent an unknown quantity, it often makes sense to use the first letter of the thing (or noun) that is unknown. As students write their own equations, invite them to practice naming the variable using the sentence frame:

- *Let ____ stand for ____.*

TRY IT SMP 1, 2, 4, 5, 6

Make Sense of the Problem

Before students work on Try It, use Co-Craft Questions to help them make sense of the problem. Ask students to write a question about the paint cans that can be answered using math, such as *How many paint cans are there in all? How many rows of paint cans does Pablo make?*

LESSON 18

Develop Solving Two-Step Word Problems Using Two Equations

SESSION 2

Read and try to solve the problem below.

Pablo paints a mural of the Puerto Rican flag. He has a box with 12 small cans of paint. There are 3 other cans of paint on a table. Pablo puts all of the paint cans together on the table in rows of 5. How many rows of paint cans does he make?

TRY IT

Possible student work:

Sample A

12 + 3 = 15 cans of paint

3 rows of 5

Math Toolkit
- counters
- 1-centimeter grid paper
- sticky notes
- multiplication models
- number lines

Sample B

3 × 12 = 15

15 ÷ 5 = 3

3 rows

DISCUSS IT

Ask your partner: Why did you choose that strategy?

Tell your partner: The strategy I used to find the answer was . . .

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DISCUSS IT SMP 2, 3, 6

Encourage students to use math terms, such as *sum, addends,* and *equal groups* as they talk to each other.

Support as needed with questions such as:
- *Can you explain how you decided what operation to use for each step?*
- *What if you did the operations or steps in reverse order?*
- *How could writing down what you know help you solve the problem?*

Common Misconception Look for students who multiply 12 and 3 instead of adding. Students who do this may understand that they are joining quantities but not understand the difference in meaning between addition and multiplication. Have them use counters or a quick drawing to model 12 ÷ 3 and 12 × 3.

Select and Sequence Student Strategies

One possible order for whole class discussion:
- using counters
- drawing an array
- using words and numbers to model each step
- writing and solving an equation for each step, using a variable for the unknown

391 Lesson 18 Solve Two-Step Word Problems Using the Four Operations

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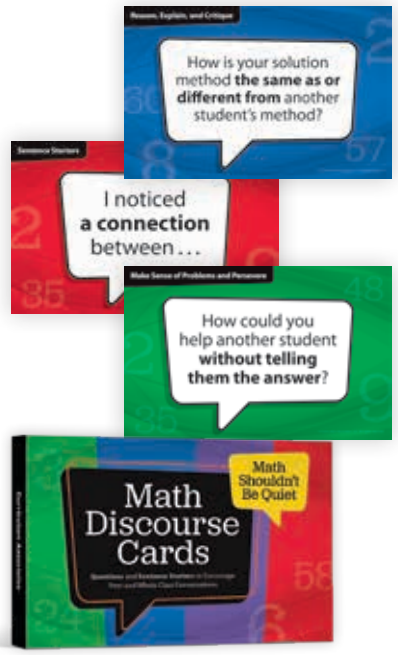


Discourse Cards

Discourse Level

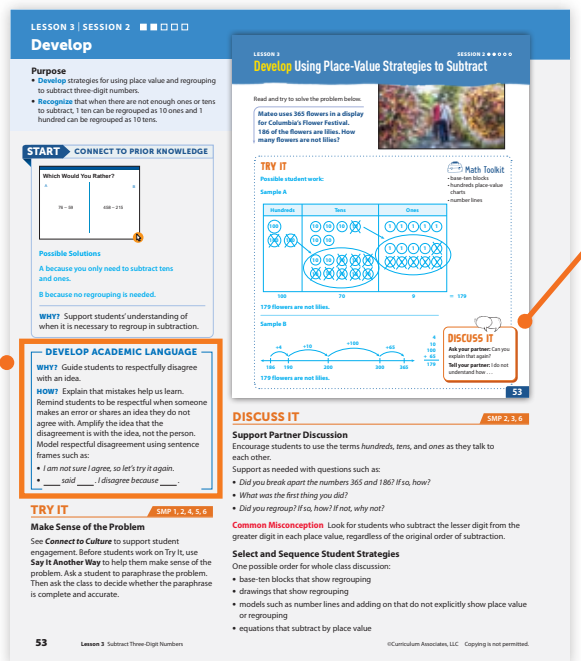
Within the Try-Discuss-Connect framework, prompts and supports guide students to develop discourse skills, such as explaining ideas and justifying their thinking.

DEVELOP ACADEMIC LANGUAGE

WHY? Guide students to respectfully disagree with an idea.

HOW? Explain that mistakes help us learn. Remind students to be respectful when someone makes an error or shares an idea they do not agree with. Amplify the idea that the disagreement is with the idea, not the person. Model respectful disagreement using sentence frames such as:

- *I am not sure I agree, so let's try it again.*
- *____ said ____. I disagree because ____.*


LESSON 3 | SESSION 2

Develop

Purpose
- Develop strategies for using place value and regrouping to subtract three-digit numbers.
- Recognize that when there are not enough ones or tens to subtract, 1 ten can be regrouped as 10 ones and 1 hundred can be regrouped as 10 tens.

START CONNECT TO PRIOR KNOWLEDGE

Which Would You Rather?

Possible Solutions

A because you only need to subtract tens and ones.

B because no regrouping is needed.

WHY? Support students' understanding of when it is necessary to regroup in subtraction.

DEVELOP ACADEMIC LANGUAGE

WHY? Guide students to respectfully disagree with an idea.

HOW? Explain that mistakes help us learn. Remind students to be respectful when someone makes an error or shares an idea they do not agree with. Amplify the idea that the disagreement is with the idea, not the person. Model respectful disagreement using sentence frames such as:
- *I am not sure I agree, so let's try it again.*
- *____ said ____. I disagree because ____.*

TRY IT SMP 1, 2, 4, 5, 6

Make Sense of the Problem

See *Connect to Culture* to support student engagement. Before students work on Try It, use Say It Another Way to help them make sense of the problem. Ask a student to paraphrase the problem. Then ask the class to decide whether the paraphrase is complete and accurate.

LESSON 3

Develop Using Place-Value Strategies to Subtract

SESSION 2

Read and try to solve the problem below.

Mateo uses 365 flowers in a display for Columbia's Flower Festival. 186 of the flowers are lilies. How many flowers are not lilies?

TRY IT

Possible student work:

Sample A

Hundreds | Tens | Ones

179 flowers are not lilies.

Sample B

179 flowers are not lilies.

Math Toolkit
- base-ten blocks
- hundreds place-value charts
- number lines

DISCUSS IT

Ask your partner: Can you explain that again?

Tell your partner: I do not understand how . . .

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DISCUSS IT SMP 2, 3, 6

Support Partner Discussion

Encourage students to use the terms *hundreds, tens,* and *ones* as they talk to each other.

Support as needed with questions such as:
- *Did you break apart the numbers 365 and 186? If so, how?*
- *What was the first thing you did?*
- *Did you regroup? If so, how? If not, why not?*

Common Misconception Look for students who subtract the lesser digit from the greater digit in each place value, regardless of the original order of subtraction.

Select and Sequence Student Strategies

One possible order for whole class discussion:
- base-ten blocks that show regrouping
- drawings that show regrouping
- models such as number lines and adding on that do not explicitly show place value or regrouping
- equations that subtract by place value

53 Lesson 3 Subtract Three-Digit Numbers

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RESOURCES FOR
Language Development

Use the resources below to build the academic language of all students, especially English learners. These supports help students learn how to communicate effectively across the language domains.

ENGLISH LEARNER SUPPORT

Feature	How This Supports English Learners	Where to Find It
Language Expectations	*Language Expectations* charts provide examples of what English learners can do based on their English language proficiency levels in connection with a learning target. These examples help teachers differentiate instruction and meet the needs of English learners.	Teacher's Guide
Cognate Support Routine	A *Cognate Support Routine* enables students who speak Spanish or other Latin-based languages to use their home language as an asset for learning English.	Teacher's Guide
Differentiation: English Learners	*Differentiation: English Learners* scaffolds the language so students can access the mathematics in one problem or part of each session. Instruction is differentiated for different levels of English proficiency and focuses on the language domains of listening, speaking, reading, and writing.	Teacher's Guide

LANGUAGE DOMAINS	BEGINNING Level 1	INTERMEDIATE Level 2	INTERMEDIATE Level 3	ADVANCED/ADVANCED HIGH Level 4	ADVANCED/ADVANCED HIGH Level 5
LISTENING	Match the word form of an orally given three-digit number with a visual representation of the number.	Given a number orally, determine which ten the number will round to using a hundred chart.	Given a number orally, round the number to the nearest ten or hundred using a number line.	Select the numbers that, when rounded to the nearest ten or hundred, will round to an orally-given ten or hundred using a number line.	Identify the numbers that, when rounded to the nearest ten or hundred, will round to an orally-given ten or hundred using a number line.
SPEAKING	State reasons why an estimate does or does not make sense using illustrations, tools, and teacher prompts.	State reasons why an estimate does or does not make sense using sentence starters and teacher prompts.	Explain why an estimate does or does not make sense using oral sentence frames and visuals.	Explain why an estimate does or does not make sense using a word or phrase bank and visuals.	Explain why an estimate does or does not make sense using visuals and examples.
READING	Match and label the place value of each digit in a three-digit number with visual representations using a table.	Match the word form of a three-digit number with a visual representation using a place-value chart.	Select the word form of a three-digit number using visual representations of the number.	Compare and contrast two explanations of how a student rounded a number to the nearest ten or hundred using tools.	Sequence sentences to demonstrate how to round to the nearest ten or hundred with a partner.
WRITING	Complete an explanation of how to round a number to the nearest ten or hundred using a word bank.	Produce simple sentences about the steps to round a number to the nearest ten or hundred using a word bank.	Describe the steps to round a number to the nearest ten or hundred using a word bank.	Describe in detail the steps to round a number to the nearest ten or hundred using visual representations and tools.	Describe in detail the steps to round numbers to the nearest ten or hundred using a number line.

Language Expectations for Differentiation chart in Teacher's Guide

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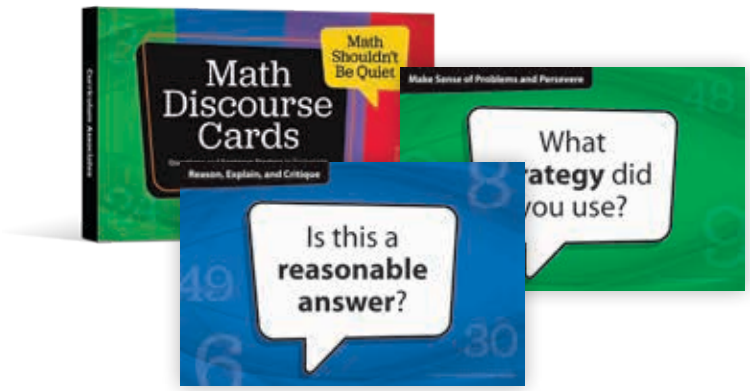
LANGUAGE AND DISCOURSE

Feature	How This Supports Language and Discourse	Where to Find It
Language Objectives	*Language Objectives* indicate the language students are expected to understand and produce as they work on the content objectives.	Teacher's Guide
Build Your Vocabulary	*Build Your Vocabulary* provides the opportunity for students to use prior knowledge in reviewing previously taught math vocabulary and provides an early entry point to general, all-purpose academic words.	Student Worktext Teacher's Guide
Try–Discuss–Connect Framework	In *Discuss It*, students explain their ideas and begin to understand other students' ideas, first with partners and then with the class. Through discourse, students see how the same problem can be represented with different models or solved with different strategies.	Student Worktext Teacher's Guide
Develop Academic Language	*Develop Academic Language* provides targeted support at the word, sentence, or discourse level to ensure mathematics content is accessible to all students.	Teacher's Guide
Explore Session: Prepare for . . .	*Prepare For* pages use graphic organizers to help students access prior knowledge and vocabulary they will build on in the lesson.	Student Worktext Teacher's Guide
Discourse Cards and Discourse Cube	*Discourse Support* resources provide sentence starters and questions to help students initiate, deepen, and extend conversations with partners, small groups, or the whole class.	Teacher Digital Experience Teacher Toolbox



Discourse Cards

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