PRIME V2™

Protocol for Review of Instructional Materials for ELLs V2

WIDA PRIME V2 INVENTORY

WIDA™

PRIME V2™

Introduction to PRIME

WIDA developed PRIME as a tool to assist publishers and educators in analyzing their materials for the presence of key components of the WIDA Standards Framework. PRIME stands for Protocol for Review of Instructional Materials for ELLs.

The PRIME correlation process identifies how the components of the 2012 Amplification of the English Language Development Standards, Kindergarten through Grade 12, and the Spanish Language Development (SLD) Standards, Kindergarten through Grade 12 are represented in instructional materials. These materials may include core and supplemental texts, websites and software (e.g., apps, computer programs), and other ancillary materials. PRIME is not an evaluative tool that judges the effectiveness of published materials.

Those who complete WIDA PRIME Correlator Trainings receive PRIME Correlator Certification. This may be renewed annually. Contact WCEPS for pricing details at store@wceps.org or 877-272-5593.

New in This Edition

PRIME has been expanded to include

- Correlation to the WIDA Standards Framework
- Connections to English and Spanish Language Development Standards
- Relevance for both U.S. domestic and international audiences

Primary Purposes

- To assist educators in making informed decisions about selecting instructional materials for language education programs
- To inform publishers and correlators on the various components of the WIDA Standards Framework and of their applicability to the development of instructional materials

Primary Audience

- Publishers and correlators responsible for ensuring their instructional materials address language development as defined by the WIDA English and Spanish Language Development Standards
- District administrators, instructional coaches, and teacher educators responsible for selecting instructional materials inclusive of or targeted to language learners

At WIDA, we have a unique perspective on how to conceptualize and use language development standards. We welcome the opportunity to work with both publishers and educators. We hope that in using this inventory, publishers and educators will gain a keener insight into the facets involved in the language development of language learners, both in the U.S. and internationally, as they pertain to products.

Overview of the PRIME Process

PRIME has two parts. In Part 1, you complete an inventory of the materials being reviewed, including information about the publisher, the materials' intended purpose, and the intended audience.

In Part 2, you answer a series of yes/no questions about the presence of the criteria in the materials. You also provide justification to support your "yes" responses. If additional explanations for "No" answers are relevant to readers' understanding of the materials, you may also include that in your justification. Part 2 is divided into four steps which correspond to each of the four elements being inventoried; see the following table.

PRIME at a Glance

Standards Framework Elements Included in the PRIME Inventory
1. Asset-based Philosophy
A. Representation of Student Assets and Contributions
2. Academic Language
A. Discourse Dimension
B. Sentence Dimension
C. Word/Phrase Dimension
3. Performance Definitions
A. Representations of Levels of Language Proficiency
B. Representations of Language Domains
4. Strands of Model Performance Indicators and the Standards Matrices
A. Connection to State Content Standards and WIDA Language Development Standards
B. Cognitive Challenge for All Learners at All Levels of Language Proficiency
C. Supports for Various Levels of Language Proficiency
D. Accessibility to Grade Level Content
E. Strands of Model Performance Indicators

PRIME Part 1: Provide Information about Materials

Provide information about each title being correlated.

Publication Title(s): **Ready Mathematics, 2020 Edition Grades 6-8**

Publisher: **Curriculum Associates**

Materials/Program to be Reviewed: **Teacher Resource Book and Math Student Book**

Tools of Instruction included in this review: **Examples from Grade 7**

Intended Teacher Audiences: **Curriculum Advisors, Classroom Teachers, Content Specialists, Language Teachers, Resource Teachers, and Paraprofessionals**

Intended Student Audiences: **Students in Grades 6, 7, & 8**

Language domains addressed in material: **Listening, Speaking, Reading, and Writing**

Check which set of standards will be used in this correlation:

☐ WIDA Spanish Language Development Standards

☒ WIDA English Language Proficiency Standards

WIDA Language Development Standards addressed: (e.g. Language of Mathematics): **Social and Instructional Language, The Language of Mathematics**

WIDA Language Proficiency Levels included: **Ready Mathematics uses levels similar to WIDA's Language Proficiency Levels, which are referenced in the program's differentiated instruction. Program levels include: Levels 1-3, Levels 2-4, and Levels 4-5.**

Most Recently Published Edition or Website: **curriculumassociates.com**

In the space below explain the focus or intended use of the materials:

Ready Mathematics prepares students for mastery of today's rigorous standards through a balance of conceptual understanding, procedural skills, fluency, and application. Ready's clear, thoughtful pedagogy, and research-based instructional model, supports a rich classroom environment in which mathematical reasoning, mathematical discourse, and a range of mathematical practices thrive.

PRIME Part 2: Correlate Your Materials

1. Asset-Based Philosophy

A. Representation of Student Assets and Contributions

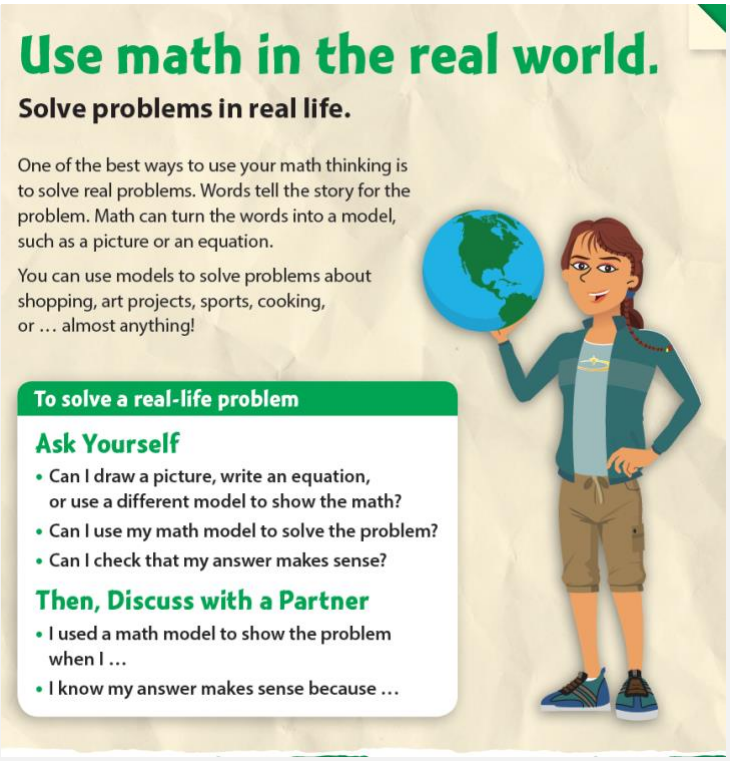
The WIDA Standards Framework is grounded in an asset-based view of students and the resources and experiences they bring to the classroom, which is the basis for WIDA's Can Do Philosophy.

1) **Are the student assets and contributions considered in the materials?** **Yes** No

2) **Are the student assets and contributions systematically considered throughout the materials?** **Yes** No

Justification: Provide examples from materials as evidence to support each "yes" response for this section. Provide descriptions, not just page numbers.

1) Student assets and contributions are considered in the materials. The Introduction section of each lesson, "activates prior knowledge, connecting what students already know with the new skills and concepts they will be learning in the lesson" (Grade 7 Teacher Resource Book, page A19). Additionally, the students are introduced to "The 8 Math Habits" which encourages them to use what they think and know about any given problem to discuss with a partner. An example of this can be seen here, in Math Habit 4 from the Grade 7 Student Book:



Use math in the real world.

Solve problems in real life.

One of the best ways to use your math thinking is to solve real problems. Words tell the story for the problem. Math can turn the words into a model, such as a picture or an equation.

You can use models to solve problems about shopping, art projects, sports, cooking, or … almost anything!

To solve a real-life problem

Ask Yourself

- Can I draw a picture, write an equation, or use a different model to show the math?
- Can I use my math model to solve the problem?
- Can I check that my answer makes sense?

Then, Discuss with a Partner

- I used a math model to show the problem when I …
- I know my answer makes sense because …

2) Student assets and contributions are considered systematically throughout the materials. Students have multiple opportunities throughout each lesson to interact with their peers and share what they know or think about the problems. The students also have a "self-check" at the beginning of each unit. This allows them to consider each skill that will be addressed in the unit and gives them an opportunity to decide, through a checklist, if it is something they already know about. The program also makes real-world connections prior to launching a new unit, as seen below, from Unit 1, Grade 7:

Unit 1
The Number System

Real-World Connection You will use positive and negative numbers in many situations in your life. Money will be deposited and withdrawn from your bank account. In some places, winter temperatures may be 20° above 0 during the day and drop to 20° below 0 at night. Niagara Falls currently erodes at a rate of about 1 foot each year. It is hoped that the amount of erosion will fall to 1 foot every 10 years. Will the attraction look the same by the time you are 50 years old?

In This Unit You will solve problems with positive and negative integers using the four operations. You will also learn how to describe rational numbers as terminating or repeating decimals. You will add, subtract, multiply, and divide with rational numbers.

Self Check

Before starting this unit, check off the skills you know below. As you complete each lesson, see how many more you can check off!

I can:	Before this unit	After this unit
add and subtract positive and negative integers, for example: $-3 + (-4) = -7$	☐	☐
multiply and divide positive and negative integers, for example: $-2 \cdot (-4) = 8$	☐	☐
add and subtract rational numbers, for example: $-2.5 + 3.8 = 1.3$	☐	☐
multiply and divide rational numbers, for example: $-\frac{1}{4} \div \frac{1}{3} = -\frac{3}{4}$	☐	☐
solve word problems with rational numbers	☐	☐

2. Academic Language

WIDA believes that developing language entails much more than learning words. WIDA organizes academic language into three dimensions: discourse, sentence, and word/phrase dimensions situated in sociocultural contexts. Instructional material developers are encouraged to think of how the design of the materials can reflect academic language as multi-dimensional.

A. Discourse Dimension (e.g., amount, structure, density, organization, cohesion, variety of speech/written text)

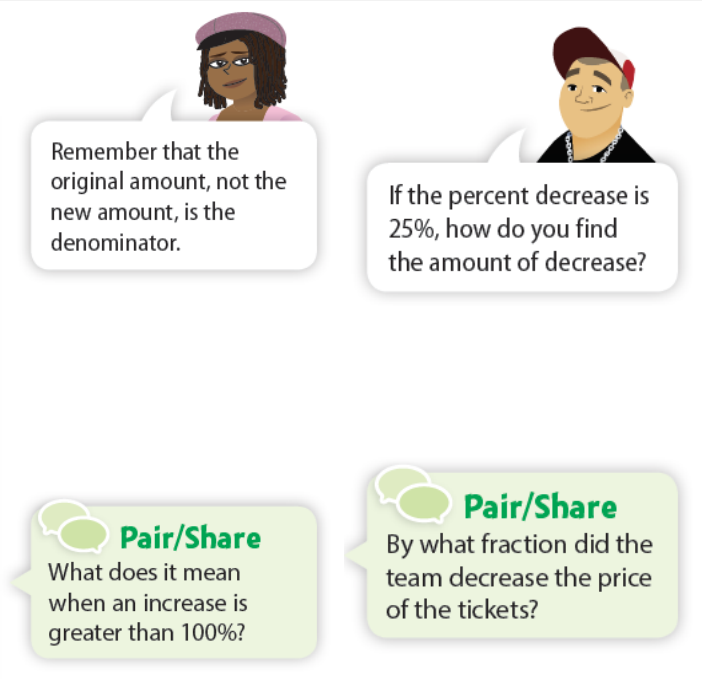
1) Do the materials address language features at the discourse dimension in a consistent manner for all identified proficiency levels? **Yes** No

2) Are the language features at the discourse dimension **Yes** No

addressed systematically throughout the materials?

Justification: Provide examples from materials as evidence to support each "yes" response for this section. Provide descriptions, not just page numbers.

1) Ready Mathematics consistently includes language features at the discourse level for all identified proficiency levels. The lessons all have language objectives plus a "pair/share" feature which allows the students to discuss with a partner their approaches, solutions, and justifications of the problems. Because each lesson is designed to take approximately one week, the students have multiple extended opportunities to engage in discourse throughout the lesson. An example of the pair/share strategy is seen here:



Language differentiation strategies found in the Teacher Resource Book are organized by WIDA levels and include multiple strategies to support learners as needed. An example from Lesson 14 is below:

Prepare for Day 1: Use with *Find Out More*

Math Terms: A *term* is part of an expression. It can be a number, a variable, or the product of a number and one or more variables. *Variables* are letters that represent unknown numbers. When a term has both a number and variables, the number is a *coefficient*.

ELP Levels 1–3	ELP Levels 2–4	ELP Levels 4–5
Reading/Listening Display and review the vocabulary. Ask students to copy the expression $4x + 4y$ and label the terms, coefficients, and variables. Have them compare notes with a partner, then work together to factor the expression. Read ***Find Out More*** aloud as students follow along. Pause after each paragraph to model paraphrasing with the ***In Your Own Words*** routine. Clarify the term *substitute* and give examples. Create a Simplifying Expressions anchor chart with labeled examples of the associative, commutative, and distributive properties for students to refer to throughout the lesson.	**Reading/Listening** Review the vocabulary. Pair students to preview ***Find Out More.*** Ask them to identify any examples of coefficients, variables, and factors in Expressions 1–3. Call on students to share examples. Read the selection aloud as students follow along. Pause after each paragraph for partners to paraphrase important information with the ***In Your Own Words*** routine. Display a Simplifying Expressions anchor chart with examples of the commutative, associative, and distributive properties. Cover the labels. Call out a method of evaluating expressions and have partners choose the corresponding example.	**Reading/Listening** Display the vocabulary. Have students preview ***Find Out More.*** Ask them to identify any coefficients, variables, and factors in Expressions 1–3, then use the ***Turn and Talk*** routine to share ideas. Have partners take turns reading a paragraph and then listening as the other partner paraphrases what was read using the ***In Your Own Words*** routine. Ask students to rate their partner's paraphrase using signals: thumbs up (agree), thumbs to the side (not sure), or thumbs down (disagree). If students show a signal other than thumbs up, have them read the paragraph again and discuss a new paraphrase.

2) Language features at the discourse dimension are presented systematically throughout the materials. Lessons begin with a discussion and/or a writing activity where the students use discourse to show what they already know about the upcoming topic. See an example below:

Use What You Know

You learned that fractions can be written as decimals. Take a look at this problem.

Jenna figured out the cost of different fruits per piece, and wrote the unit costs as fractions. She wants to write each unit cost as a decimal to show the cost in cents. How can she write these common fractions as decimals?

Fruit	Cost Per Piece in Dollars
strawberry	$\frac{1}{10}$
kiwi	$\frac{1}{5}$
apple	$\frac{1}{4}$
banana	$\frac{1}{2}$
mango	$\frac{3}{4}$

Use the math you already know to solve the problem.

a. Write each fraction as an equivalent fraction with a denominator of 10 or 100.

Unit Fraction	Equivalent Fraction	Decimal
$\frac{1}{10}$		
$\frac{1}{5}$		
$\frac{1}{4}$		
$\frac{1}{2}$		
$\frac{3}{4}$		

b. What about the denominators of the fractions made it convenient to use equivalent fractions as a step in writing them as decimals? _____

Throughout the lessons, students discuss and process content through reading, writing, peer, small and large group activities. Examples are seen below:

Subtracting positive and negative fractions and decimals is also similar to subtracting integers.

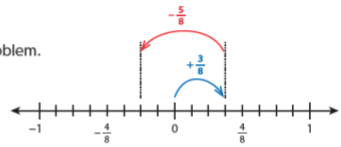
How can you subtract $\frac{3}{8} - \frac{5}{8}$?

First rewrite the subtraction problem as an addition problem using the additive inverse.

$$\frac{3}{8} - \frac{5}{8} = \frac{3}{8} + \left(-\frac{5}{8}\right)$$

You can use a number line to show the problem.

$$\frac{3}{8} + \left(-\frac{5}{8}\right) = \frac{3 + (-5)}{8} = -\frac{2}{8}$$



Reflect

1 How is adding positive and negative fractions similar to adding integers? How is it different?

_____

Read the problem below. Then explore different ways to understand adding or subtracting any rational numbers.

Julia is playing a computer game. To enter a new quest she has to pay a "tax" of 2.5 points, but she expects to earn 7.5 points. For each quest, how many points can she gain overall?

Study the example below. Then solve problems 16–18.

Example

Reno needs $\frac{8}{3}$ ounces of milk for a dessert recipe. His kitchen scale shows he has 2.6 ounces of milk. Does he have more or less than $\frac{8}{3}$ ounces?

Look at how you could show your work using division.

$\frac{8}{3} = 8 \div 3$

```
     2.666
  3)8.000
 - 6
   20
 - 18
    20
  - 18
     20
   - 18
      2
```

Reno needs $2.\overline{6}$ ounces.

$2.\overline{6} > 2.6$

Solution Reno has just a little less than $\frac{8}{3}$ ounces.

The student rewrote the fraction as a decimal using division.

Pair/Share

The division did not end in 0. Why did the student stop dividing?

B. Sentence Dimension (e.g., types, variety of grammatical structures, formulaic and idiomatic expressions; conventions)

1) Do the materials address language features at the sentence dimension for all of the identified proficiency levels?	**Yes**	No
2) Are the language features at the sentence dimension appropriate for the identified proficiency levels?	**Yes**	No
3) Are the language features at the sentence dimension addressed systematically throughout the materials?	**Yes**	No

Justification: Provide examples from materials as evidence to support each "yes" response for this section. Provide descriptions, not just page numbers.

1) The materials address language features at the sentence dimension for all of the identified proficiency levels. The Teacher Resource Guide provides differentiated instruction and support for students who are on-level, or need intervention or a challenge.

Many times, language learners will be provided with sentence frames, graphic organizers and the like, depending on their proficiency level, to help support understanding. See an example below from Unit 4:

ELP Levels 1–3	ELP Levels 2–4	ELP Levels 4–5
Speaking/Writing Read *Connect It* as a class. Discuss each problem with the group. Allow students to answer with single-word responses or simple phrases. Use ***Revoicing*** to clarify and extend responses. Have students use these frames to support responses to problems 2, 3, and 6: • I know that ∠*CDE* and ∠*EDF* are supplementary because they form a straight line. • I know that the measures of ∠*CDE* and ∠*EDF* equal 180° because they are supplementary angles. • I know ∠*ADC* is 55° because it is a vertical angle to ∠*EDF* and vertical angles are congruent.	**Speaking/Writing** Read *Connect It* as a class. Have partners complete the following *if-then* frames: • If ∠*CDE* and ∠*EDF* form a straight line, then they are supplementary angles. • If ∠*CDE* and ∠*EDF* are supplementary angles, then their measures must add to 180°. • If ∠*ADC* and ∠*EDF* are vertical angles, then they are congruent. Point out the *if* clause in a sentence frame. Explain that when the *if* clause tells something known to be true, the word *if* means *because*. Challenge partners to write two *if-then* statements about problem 5.	**Speaking/Writing** Read *Connect It* as a class. Have students discuss each problem and compose *if-then* statements about problems 2 and 3. Provide the following sentence frame: • If ∠*CDE* and ∠*EDF* ____, then ____. Point out the *if* clause. Explain that when the *if* clause tells something known to be true, the word *if* means *because*. For problem 6, have students work individually to write their own *if-then* statement. Then, have students share their *if* statement with their partner and see if their partner can complete the *then* statement. Ask students to compare their statements. If the statements are the same, challenge them to write a different statement.

2) Language features at the sentence dimension are appropriate for the identified proficiency levels. Language instruction includes scaffolds like language frames, modeling, guided questioning, cooperative learning, and specific differentiated instruction. See a few examples here:

▶ English Language Learners

Write the word *extended* on the board. Draw a line segment with endpoints *A* and *B*.

Ask students to watch as you extend the line segment past endpoint *B*. Say: *I have* extended *line segment* AB.

Draw another line segment. Have a volunteer extend segment and use the language shown above.

Connect It **Now you will solve the problem from the previous page using equations.**

2 What number represents the amount Lisa owes each friend? _____

3 Is the amount positive or negative? Why?

_____

_____

4 How many friends does Lisa owe? _____

5 Complete the phrase to show how much Lisa owes.

_____ groups of _____

Lesson 18 Problem Solving with Angles

Modeled and Guided Instruction

At A Glance

Students use supplementary and vertical angles to find an unknown measure on a figure.

Step By Step

- Read the problem at the top of the page as a class.

▶ English Language Learners

- Have students locate $\angle ADC$.
- Guide students to recognize that $\angle ADC$ and $\angle EDF$ are vertical angles, and that $\angle ADC$ and $\angle CDE$ are supplementary angles.
- Point out that if they know the measure of either $\angle EDF$ or $\angle CDE$, they can find the measure of $\angle ADC$.

Let's Talk About It

Solve the problems below as a group.

8 Jason's football team lost 6 yards from their starting position and then lost another 5 yards. What number represents a loss of 6 yards? _____ a loss of 5 yards? _____

9 Use a number line to find the team's total loss.

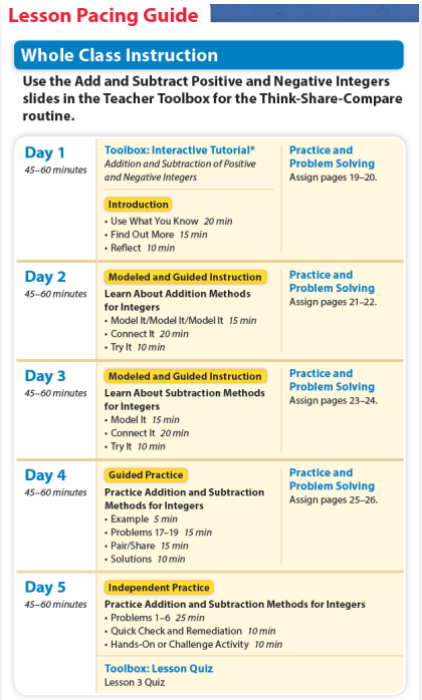
3) Language features at the sentence dimension are systematically presented throughout the Ready Mathematics materials. Each lesson contains a pacing guide which follows the same format: Introduction, Guided Instruction, Guided Practice, and Independent Practice. Other lessons, which focus more quickly on the math skills being covered, include a Modeled and Guided Instruction section. Embedded in each of these areas are multiple activities and other instructional materials at the sentence dimension. See an example of both from pacing guides below:

Lesson Pacing Guide

Whole Class Instruction

Use the *Understand* Addition of Positive and Negative Integers slides in the Teacher Toolbox for the Think-Share-Compare routine.

Day 1 45–60 minutes	**Toolbox: Interactive Tutorial*** *Understanding Adding and Subtracting Positive and Negative Numbers* **Introduction** • Think It Through Question *20 min* • Think *10 min* • Think *10 min* • Reflect *5 min*	**Practice and Problem Solving** Assign pages 3–4.
Day 2 45–60 minutes	**Guided Instruction** **Think About Adding Positive and Negative Integers** • Let's Explore the Idea *20 min* • Let's Talk About It *15 min* • Try It Another Way *10 min*	**Practice and Problem Solving** Assign pages 5–6.
Day 3 45–60 minutes	**Guided Practice** **Connect Ideas About Adding Positive and Negative Integers** • Compare *5 min* • Explain *10 min* • Analyze *10 min*	**Practice and Problem Solving** Assign pages 7–8.
	Independent Practice **Apply Ideas About Adding Positive and Negative Integers** • Put It Together *15 min* • Intervention, On-Level, or Challenge Activity *5 min*	
	Toolbox: Lesson Quiz Lesson 1 Quiz	



Lesson Pacing Guide

Whole Class Instruction

Use the Add and Subtract Positive and Negative Integers slides in the Teacher Toolbox for the Think-Share-Compare routine.

Day 1 45–60 minutes	**Toolbox: Interactive Tutorial*** *Addition and Subtraction of Positive and Negative Integers* **Introduction** • Use What You Know *20 min* • Find Out More *15 min* • Reflect *10 min*	**Practice and Problem Solving** Assign pages 19–20.
Day 2 45–60 minutes	**Modeled and Guided Instruction** **Learn About Addition Methods for Integers** • Model It/Model It/Model It *15 min* • Connect It *20 min* • Try It *10 min*	**Practice and Problem Solving** Assign pages 21–22.
Day 3 45–60 minutes	**Modeled and Guided Instruction** **Learn About Subtraction Methods for Integers** • Model It *15 min* • Connect It *20 min* • Try It *10 min*	**Practice and Problem Solving** Assign pages 23–24.
Day 4 45–60 minutes	**Guided Practice** **Practice Addition and Subtraction Methods for Integers** • Example *5 min* • Problems 17–19 *15 min* • Pair/Share *15 min* • Solutions *10 min*	**Practice and Problem Solving** Assign pages 25–26.
Day 5 45–60 minutes	**Independent Practice** **Practice Addition and Subtraction Methods for Integers** • Problems 1–6 *25 min* • Quick Check and Remediation *10 min* • Hands-On or Challenge Activity *10 min*	
	Toolbox: Lesson Quiz Lesson 3 Quiz	

C. Word/Phrase Dimension (multiple meanings of words, general, specific, and technical language[1])

1) **Do the materials address language features at the word/phrase dimension in a consistent manner for all identified proficiency levels?** **Yes** No

2) **Are words, expressions, and phrases represented in context?** **Yes** No

3) **Is the general, specific, and technical language appropriate for the targeted proficiency levels?** **Yes** No

4) Is the general, specific, and technical[2] language systematically presented throughout the materials? **Yes** No

Justification: Provide examples from materials as evidence to support each "yes" response for this section. Provide descriptions, not just page numbers.

1) The Ready Mathematics materials address language features at the word/phrase dimension in a consistent manner for all identified proficiency levels. Each lesson begins with an overview any new vocabulary that will be introduced and/or vocabulary to be reviewed from a previous lessons. See an example here from Lesson 5:

Lesson Vocabulary

- **terminating decimals** decimals that end and whose only repeating digit is 0.
- **repeating decimals** decimals that never end and repeat the same digits over and over.

Review the following key terms.

- **percent** the number of parts per 100.
- **extend** make something longer or greater; continue.
- **verify** to check or confirm accuracy.

Additionally, the ELP Chart provided in the lessons often provides an overview of any key math terms as well as other ideas about incorporating academic vocabulary into instruction. See an example here:

[2]General language refers to words or expressions not typically associated with a specific content areas (e.g., describe a book).
Specific language refers to words or expressions used across multiple academic content areas in school (chart, total, individual).
Technical language refers to the most precise words or expressions associated with topics within academic content areas in school and is reflective of age and developmental milestones.

Prepare for Day 1: Use with *Find Out More*

Math Terms: A *factor* is a number being multiplied. In math, a *property* is a rule that is true for a whole set of numbers.

ELP Levels 1–3	ELP Levels 2–4	ELP Levels 4–5
Reading/Speaking Display and review the review Math Terms. Then use ***Find Out More*** to review and discuss the meanings of the identity and zero properties of multiplication and the distributive property. Have students restate and underline each term. For each property, pause for a brief small-group discussion about how the problem demonstrates the property. Call on students to share ideas. Use the ***Revoicing*** technique to validate ideas while modeling correct grammar and sentence structure.	**Reading/Speaking** Display and review the review Math Terms. Ask students to scan ***Find Out More*** to locate and underline the names of the properties in this section. Call on students to read portions of the text aloud. Each time an underlined term is read, pause for students to discuss the example with a partner using the sentence frame: • This problem shows the ____ property because ____. Encourage analysis of the distributive property by asking: *How can the product of two negative numbers be a positive number?*	**Reading/Speaking** Display and review the review Math Terms. Ask students to scan ***Find Out More*** to locate and underline the terms and the properties discussed on the page. Then have students read the section and think about how the examples illustrate the properties. Next, ask students to meet with a partner to develop definitions or explanations of the identity, zero, and commutative properties of multiplication and the distributive property. Have partners share their ideas with the class, using complete sentences and appropriate math terms. Encourage analysis of the distributive property by asking partners to demonstrate the property using two different numbers.

Prepare for Day 2: Use with *Learn About*

ELP Levels 1–3	ELP Levels 2–4	ELP Levels 4–5
Listening/Speaking Read the ***Learn About*** problem aloud as students follow along. Clarify the meaning of *debt*, or money owed. Use the ***Act It Out*** routine to help students make sense of the problem. If available, use props such as play money for students to use while acting out the problem as you narrate. Check understanding by asking questions that students can respond to with yes/no or short answers. Sample questions: • *How many friends does Lisa owe?* • *Is the number Lisa owes represented by a positive or negative number?* • *Can you use multiplication to solve the problem?*	**Listening/Speaking** Read the ***Learn About*** problem aloud as students follow along. Organize students into small groups and have them use the ***Act It Out*** routine to help students make sense of the problem. Ask them to reenact the problem using the text as a guide. Encourage students to collaborate to decide who will play each role and to create their own narration based on the problem. Provide the following sentence starters to support narration: • This is ____. • Lisa has ____. • She owes ____. • In other words, ____.	**Listening/Speaking** Read the ***Learn About*** problem as students follow along. Organize students into small groups and have them use the ***Act It Out*** routine to help students make sense of the problem. Ask them to reenact the problem using the text as a guide. Encourage students to collaborate to decide who will play each role and to create their own narration based on the problem. Encourage groups to use details and incorporate academic vocabulary words such as *integer, represent, owe,* and *debt*.

2) The words, expressions, and phrases used in the Ready Mathematics materials are presented in context. As mentioned above, the lessons will begin with an overview of any new vocabulary that will be introduced and/or a review of previously learned vocabulary. The lesson then will utilize the vocabulary in context. Additionally, the Units begin with a "Build Your Vocabulary" section which allows the students to spend time with key vocabulary they will see in the subsequent lessons. An example of this is seen here:

Unit 1
Preview the Unit

Review Words

negative	operation
positive	system

Build Your Vocabulary

Below are words you may know. These words have an everyday meaning and a math meaning. If you don't know the term, write "I don't know yet." Discuss the term with a partner and together write a definition and an example.

Term	Everyday Meaning or Example	Math Meaning or Example
positive		
negative		
system		
operation		

Students then see these words in context throughout the unit. Following the example above, the students will begin with Leeson 1 which is called "Adding Positive and Negative Integers."

Lesson 1 Guided Instruction

Think About **Adding Positive and Negative Integers**

3) General, specific, and technical language is appropriate for the targeted proficiency levels in the Ready Mathematics program. The Teacher Resource Book uses the English Language Development section to differentiate the language appropriate for the different proficiency levels. See an example here:

Prepare for Day 4: Use with *Practice*

ELP Levels 1–3	ELP Levels 2–4	ELP Levels 4–5
Reading/Speaking Read each *Practice* problem aloud as students follow along. Adapt the *Co-constructed Word Bank* routine by working with students to generate a mini-word bank for each problem. Allow time for students to solve the problem independently, then pause for them to explain their solution to a partner. Remind students to use the word bank to support their explanations. Call on individuals to share ideas with the group. Work with small groups to guide them through the *Pair/Share* prompts. Validate understanding and support grammar and usage by using *Revoicing* to clarify or restate students' ideas.	**Reading/Speaking** Pair students to read each problem and use the *Co-constructed Word Bank* routine to generate a list of words that might be used to explain their thinking when solving the *Practice* problems or discussing ideas during *Pair/Share*. Have students solve each problem individually and then pause to discuss their solution with a partner. Encourage students to use complete sentences when responding to the *Pair/Share* prompts. Provide these sentence frames: • The first step I decided to take was ____. • I can check that my answer is reasonable by ____. • Rashad's answer ____ because ____.	**Reading/Speaking** Adapt the *Co-constructed Word Bank* routine by asking students to scan the *Practice* problems independently and highlight words they might use to explain their thinking when solving the problems or discussing solutions during *Pair/Share*. Have students solve each problem individually and then pause to discuss their solution with a partner. During *Pair/Share* discussion, encourage students to use complete sentences and incorporate academic vocabulary such as *explain, represent, describe,* and *reasonable*.

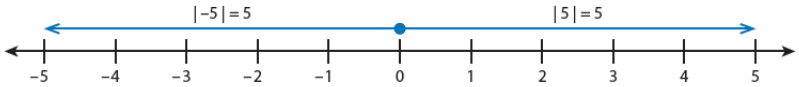
4) General, specific, and technical language are presented in a consistent and systematic manner throughout the program. Specific and technical language is presented in all sections of the math lessons. General language is practiced throughout the lessons as well in peer, group, and whole class discussions and cooperative activities that practice language and new content. An example of all three types of language being used in a lesson is seen here:

Think It Through

When do you add positive and negative integers?

You can use positive and negative integers to represent quantities you see in sports, games, business, science, and in other areas of your life.

For instance, in a game, you might gain 5 points if you answer the question correctly and lose 5 points if you answer the question incorrectly. The numbers 5 and −5 are on opposite sides of the number line and have the same distance from 0 on the number line. This means that the numbers have the same **absolute value**.



The students are discussing how they add positive and negative integers in real life situations, thus utilizing more general language. The lesson then proceeds to connect this to the more technical term of "absolute value" in the lesson.

3. Performance Definitions

The WIDA Performance Definitions define the WIDA levels of language proficiency in terms of the three dimensions of academic language described above (discourse, sentence, word/phrase) and across six levels of language development.

A. Representation of Levels of Language Proficiency

1) Do the materials differentiate between the language proficiency levels?	**Yes**	No
2) Is differentiation of language proficiency developmentally and linguistically appropriate for the designated language levels?	**Yes**	No
3) Is differentiation of language systematically addressed throughout the materials?	**Yes**	No

Justification: Provide examples from materials as evidence to support each "yes" response for this section. Provide descriptions, not just page numbers.

1) Ready Mathematics uses levels similar to WIDA's English Language Proficiency Levels, which are referenced in the program's English Language Development section. The levels are broken down as follows: ELP Levels 1-3, ELP Levels 2-4, and ELP Levels 4-5. Each of the lessons contain a differentiated instruction chart which, according to the Teacher Resource Book, page A24, "provide strategic scaffolds across the levels of English language proficiency." An example of the chart is seen here:

Prepare for Day 3: Use with *Example* and *Pair/Share*

ELP Levels 1–3	ELP Levels 2–4	ELP Levels 4–5
Reading/Writing Read ***Example*** aloud. Ask students to explain the diagram by pointing to quantities in the problem and the corresponding parts of the diagram. Have them explain the diagram in complete sentences, for example, "There are 5 peaches and 5 parts of the diagram with a P." Read the example solution and ask students to repeat chorally. Before ***Pair/Share***, be sure students understand sharing equally. Point to the *if* clause. Explain that it tells something the reader should assume is true. Offer frames for responses: • The fruit is shared equally. So, each student will receive $1\frac{1}{2}$ pieces of fruit. • We found the solution by ____.	**Reading/Writing** Have students partner-read ***Example*** and identify the number of apples, peaches, pieces of fruit, and students. Help students explain how the tape diagram represents the problem. Call on students to read the sample solution aloud. Then, ask pairs to work on ***Pair/Share***, using any method to find a solution. If needed, review that clauses beginning with *if* often tell something the reader should assume is true. Offer frames for pairs to share responses with the class: • If the fruit is shared equally, each student will receive $1\frac{1}{2}$ pieces of fruit. • We found the solution by ____.	**Reading/Writing** Have students read ***Example*** independently. Call on students to show how each quantity in the problem is represented in the tape diagram. Ask partners to work together on the ***Pair/Share*** question, using any method to find a solution. When most students have found a solution, challenge them to use the wording of the ***Pair/Share*** question in a complete sentence that answers the problem. Then, call on partners to share their solution strategies with the class using complete sentences.

2) Differentiation is linguistically appropriate for students working above and below grade level. The program is careful to distinguish that it scaffolds "the language , not the mathematics, so that ELLs can meet the demands of the same grade-level standards as their English-speaking peers" (Teacher Resource Book, page A31). The English Language Development section, shown above, differentiates language appropriately to meet the needs of all language learners.

3) Differentiation of language is systematically addressed throughout the materials. Each lesson contains one or more of the above mentioned differentiation instruction charts. The differentiation strategies maintains the rigor of the content while changing the supports and scaffolds at the different language levels to meet the needs of all students. An example here, from Unit 1, Lesson 2, demonstrates how the program differentiates for language while teaching the concept of nonnegative numbers:

Prepare for Day 2: Use with *Let's Talk About It, Problems 8–10*

ELP Levels 1–3	ELP Levels 2–4	ELP Levels 4–5
Speaking/Listening Display a number line and explain that distance tells how many units apart two things are. Since you can count the units, distance must be positive or zero. Remind students how to state expressions with absolute value. Have partners discuss ***Let's Talk About It*** problems 8–10. Offer these sentence frames: • The absolute value of ____ is equal to the absolute value of ____. • The absolute value of ____ is equal to ____. If you are using the ***Mathematical Discourse*** questions, display the term *nonnegative*. Point out and define the prefix *non-*. Call on students to define *nonnegative*.	**Speaking/Listening** Direct students' attention to the number line above ***Let's Talk About It***, problem 8. Ask: *Why do we use absolute value to find the distance?* Listen for: *Absolute value is always positive or zero. It shows the distance from zero, or distance between two numbers.* Have partners work together to solve problems 9 and 10. If you are using the ***Mathematical Discourse*** questions, first display the term *nonnegative*. Point out the prefix *non-*, which means "not." Ask two or three volunteers to share examples of other familiar words with *non-* and approximate their definitions. Pair students to define *nonnegative* in their own words.	**Speaking/Listening** Introduce the term *nonnegative*. Ask students to examine the structure of the word to determine its meaning. Challenge pairs of students to define *nonnegative* three ways: in a complete sentence, in two words, and in one word. Then have students use the number line above problem 8 to explain why distance is nonnegative. Ask: *What role does absolute value play in finding distance on a number line?* Have students solve ***Let's Talk About It***, problems 8–10 independently and then compare their answers with a partner. If you are using the ***Mathematical Discourse*** questions, have students use the term *nonnegative*.

Students are given sentence frames and number lines as supports for levels 1-3, are paired up to discuss in levels 2-4 and are expected to use different types of discourse to discuss with a partner at levels 4-5.

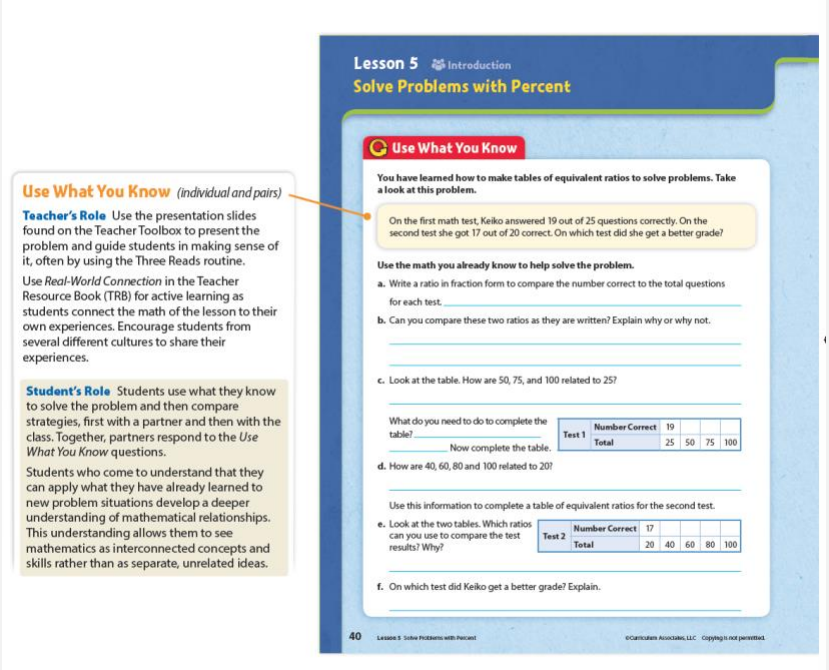
B. Representation of Language Domains

WIDA defines language through expressive (speaking and writing) and receptive (reading and listening) domains situated in various sociocultural contexts.

1) **Are the language domains (listening, speaking, reading, and writing) targeted in the materials?** **Yes** No
2) **Are the targeted language domains presented within the context of language proficiency levels?** **Yes** No
3) **Are the targeted language domains systematically integrated throughout the materials?** **Yes** No

Justification: Provide examples from materials as evidence to support each "yes" response for this section. Provide descriptions, not just page numbers.

1) All four language domains are targeted in the Ready Mathematics materials. Each lesson contains multiple opportunities for students to listen, speak, read, and write. The example below demonstrates how all four domains are used in the Introduction section of Lesson 5. Students begin by listening to the teacher as a problem is presented. The students will then read the problems in their book, write the answers and discuss/compare strategies with a partner and then as a whole class:



Use What You Know *(individual and pairs)*

Teacher's Role Use the presentation slides found on the Teacher Toolbox to present the problem and guide students in making sense of it, often by using the Three Reads routine.

Use *Real-World Connection* in the Teacher Resource Book (TRB) for active learning as students connect the math of the lesson to their own experiences. Encourage students from several different cultures to share their experiences.

Student's Role Students use what they know to solve the problem and then compare strategies, first with a partner and then with the class. Together, partners respond to the *Use What You Know* questions.

Students who come to understand that they can apply what they have already learned to new problem situations develop a deeper understanding of mathematical relationships. This understanding allows them to see mathematics as interconnected concepts and skills rather than as separate, unrelated ideas.

Lesson 5 Introduction

Solve Problems with Percent

Use What You Know

You have learned how to make tables of equivalent ratios to solve problems. Take a look at this problem.

On the first math test, Keiko answered 19 out of 25 questions correctly. On the second test she got 17 out of 20 correct. On which test did she get a better grade?

Use the math you already know to help solve the problem.

a. Write a ratio in fraction form to compare the number correct to the total questions for each test. _____

b. Can you compare these two ratios as they are written? Explain why or why not.

c. Look at the table. How are 50, 75, and 100 related to 25?

What do you need to do to complete the table? _____ Now complete the table.

Test 1	Number Correct	19				
	Total	25	50	75	100	

d. How are 40, 60, 80 and 100 related to 20?

Use this information to complete a table of equivalent ratios for the second test.

e. Look at the two tables. Which ratios can you use to compare the test results? Why?

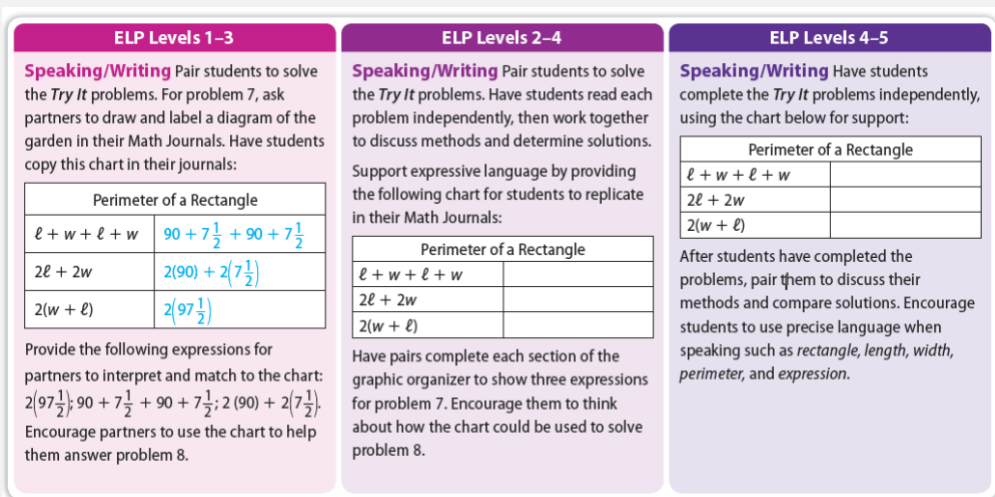
Test 2	Number Correct	17				
	Total	20	40	60	80	100

f. On which test did Keiko get a better grade? Explain.

40 Lesson 5 Solve Problems with Percent ©Curriculum Associates, LLC Copying is not permitted.

The lessons all contain activities that incorporate all the language domains.

2) Language domain activities are supported with instructional scaffolds and differentiated instruction to make content accessible for all targeted proficiency levels. The Differentiated Instruction Charts found in the Teacher Resource Book for each lesson outline specific scaffolds and supports for activities at each of the identified proficiency levels. Additionally, the charts indicate which domain(s) the activities are intended to address. See an example here of Speaking and Writing:



ELP Levels 1–3

Speaking/Writing Pair students to solve the *Try It* problems. For problem 7, ask partners to draw and label a diagram of the garden in their Math Journals. Have students copy this chart in their journals:

Perimeter of a Rectangle	
$\ell + w + \ell + w$	$90 + 7\frac{1}{2} + 90 + 7\frac{1}{2}$
$2\ell + 2w$	$2(90) + 2\left(7\frac{1}{2}\right)$
$2(w + \ell)$	$2\left(97\frac{1}{2}\right)$

Provide the following expressions for partners to interpret and match to the chart: $2\left(97\frac{1}{2}\right)$; $90 + 7\frac{1}{2} + 90 + 7\frac{1}{2}$; $2(90) + 2\left(7\frac{1}{2}\right)$. Encourage partners to use the chart to help them answer problem 8.

ELP Levels 2–4

Speaking/Writing Pair students to solve the *Try It* problems. Have students read each problem independently, then work together to discuss methods and determine solutions.

Support expressive language by providing the following chart for students to replicate in their Math Journals:

Perimeter of a Rectangle	
$\ell + w + \ell + w$	
$2\ell + 2w$	
$2(w + \ell)$	

Have pairs complete each section of the graphic organizer to show three expressions for problem 7. Encourage them to think about how the chart could be used to solve problem 8.

ELP Levels 4–5

Speaking/Writing Have students complete the *Try It* problems independently, using the chart below for support:

Perimeter of a Rectangle	
$\ell + w + \ell + w$	
$2\ell + 2w$	
$2(w + \ell)$	

After students have completed the problems, pair them to discuss their methods and compare solutions. Encourage students to use precise language when speaking such as *rectangle, length, width, perimeter,* and *expression.*

3) The targeted language domains are systematically integrated throughout the Ready Mathematics materials. All four language domains (Listening, Speaking, Reading, and

Writing) are included in each lesson through a variety of activities, guided practice, individual practice, and group/pair work. The structure of each lesson, shown below, provides opportunities for students to engage with all of the domains:

Part of the Lesson	Teacher Actions	Student Actions
Introduction Activates prior knowledge, connecting what students already know with the new skills and concepts they will be learning in the lesson.	• Allows student think time • Supports effective partner communication • Facilitates whole class discourse of student discussions • Guides students to connect multiple strategies • Encourages effort • Recognizes mistakes as opportunities for learning	• Perseveres in thinking about problems and questions • Solves problems independently using methods or approaches that make sense • Articulates and explains solution strategy and reasoning • Actively listens to partners and whole class conversations • Participates in small group and whole class conversations, politely critiquing the reasoning of others • Solves problems using multiple strategies or mathematical tools • Recognizes mistakes as opportunities to learn • Applies learning to new problems
Modeled and Guided Instruction Explores ways to solve problems using multiple representations and prompts students to reason and explain their thinking.		
Guided Practice Models self-questioning and mathematical habits of mind as students solve problems and discuss their solution strategies.	• Observes student strategies • Asks questions to guide or correct understanding • Differentiates instruction as needed in stations or small groups • Encourages students to solve problems in more than one way	
Independent Practice Provides problems in a variety of assessment formats that integrate and extend concepts and skills.		

4. The Strands of Model Performance Indicators and the Standards Matrices

The Strands of Model Performance Indicators (MPIs) provide sample representations of how language is processed or produced within particular disciplines and learning contexts. WIDA has five language development standards representing language in the following areas: Social and Instructional Language, The Language of Language Arts, The Language of Mathematics, The Language of Science, The Language of Social Studies as well as complementary strands including The Language of Music and Performing Arts, The Language of Humanities, The Language of Visual Arts.

The Standards Matrices are organized by standard, grade level, and domain (Listening, Speaking, Reading, and Writing). The standards matrices make an explicit connection to state academic content standards and include an example for language use. Each MPI includes a uniform cognitive function (adopted from Bloom's taxonomy) which represents how educators can maintain the cognitive demand of an activity while differentiating for language. Each MPI provides examples of what students can reasonably be expected to do with language using various supports.

A. Connection to State Content Standards and WIDA Language Development Standards

1) Do the materials connect the language development standards to the state academic content standards?	**Yes**	No
2) Are the academic content standards systematically represented throughout the materials?	**Yes**	No
3) Are social and instructional language and one or more of the remaining WIDA Standards present in the materials?	**Yes**	No

Justification: Provide examples from materials as evidence to support each "yes" response for this section. Provide descriptions, not just page numbers.

1) The Ready Mathematics program is "Guided by the framework for English language proficiency by the Council of the Great City Schools and the Council of Chief State School Officers and the WIDA Standards" (Teacher Resource Book, page A30). This framework is embedded in the program's emphasis in the Common Core Standards. Lessons connect the language standards to the content standards consistently throughout the program. Pages A22-23 of the Teacher Resource Book outlines how this occurs through research-

based language routines that ware included in the lessons. Some of these routines include "Three Reads," "In Your Own Words," "Act It Out," and "Turn and Talk." An example of "Act It Out" is seen below, from Page 161 of the Teacher Resource Book:

▶ Hands-On Activity

Act out the solution to an equation.

Materials: 14 books, 4 large *X*s

Say: *A teacher has 14 books. He gives 1 book each to 2 students. He divides the remaining books equally among 4 other students. How many books does each of the 4 students get?*

Call 4 students to the front, giving each an *X* to hold. Call up 2 more students. Place 14 books next to them. Have the class suggest an equation that describes the situation. Write $4x + 2 = 14$ on the board.

Have the students without *X*s each take a book and sit down. Have the class revise the equation to reflect the new situation. Write $4x = 12$ under the first equation. Have the remaining students divide the books equally to solve the problem. Write $x = 3$.

Compare the acted out solution with the steps for solving an equation.

2) The academic content standards are systematically represented throughout the Ready Mathematics program. The Lesson Overviews all state clear Content Objectives. There is also a section entitled "CCSS Focus" which details the standard that will be addressed in the lesson, any additional standards that may be covered, and which Standards for Mathematical Practice (SMP) the students will be exposed to. An example from Lesson 15 is seen below:

LESSON OVERVIEW

Lesson 15
Writing Linear Expressions

CCSS Focus

Domain
Expressions & Equations

Cluster
A. Use properties of operations to generate equivalent expressions.

Standard
7.EE.A.2 Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related. *For example, $a + 1.05a = 1.05a$ means that "increase by 5%" is the same as "multiply by 1.05."*

Additional Standard
7.EE.A.1 (See page B3 for full text.)

Standards for Mathematical Practice (SMP)
2 Reason abstractly and quantitatively.
4 Model with mathematics.
6 Attend to precision.
7 Look for and make use of structure.
8 Look for and express regularity in repeated reasoning.

Lesson Objectives

Content Objectives
- Rewrite expressions in different forms to better understand relationships within contexts.
- Incorporate expressions representing length and width into formulas for perimeter and area of triangles and rectangles.

Language Objectives
- Read to understand how to identify and evaluate equivalent expressions.
- Describe three equivalent expressions using the terms *length*, *width*, and *equivalent expression*.
- Write complete sentences to explain two ways of finding the sale price of an item.
- Describe how to find the sale price of an item to a partner or small group.
- Read word problems that require students to follow a set of instructions.

Prerequisite Skills
- Understand the concept of equivalent expressions.
- Simplify expressions.
- Write expressions to represent problem situations.

Lesson Vocabulary
- **equivalent expressions** expressions that have the same value for every possible value of the variable.

Review the following terms:
- **adjacent** next to each other.
- **dimension** a length in one direction. A figure may have one, two, or three dimensions.

Learning Progression

In Grade 6 students learned to represent situations with expressions and equations. **Earlier in Grade 7** students learned to represent situations mathematically, perform necessary calculations, and understand the result in terms of the original situation.

In this lesson students learn that while equivalent expressions describe the same situation, different expressions can give different perspectives and might be more useful for certain purposes. For example, if an item costs x dollars, the sale price after a 30% discount could be given by either $x - 0.3x$ or $0.7x$. One expression describes the sale price as a discount subtracted from the original price; the other describes the sale price as a percentage of the original. Both methods are equally valid.

In Grade 8 students will build on this skill and solve linear equations with rational coefficients. After Grade 8 students will work with situations involving functions and integer exponents.

142a Lesson 15 Writing Linear Expressions

3) The materials systematically integrate social and instructional language with the language of mathematics. Social and Instructional language is used in the practice and application of all skills taught in the lessons through cooperative dialogue and mathematical discourse. The example seen below, from Lesson 3, illustrates several examples of how the program integrates social and instructional language with the language of mathematics. There is also an example of the use of the language of Science:

4 Which situation could the numeric expression $-8 + 10$ represent? Select all that apply.

A An atom has a positive charge because it contains 8 electrons that each have a charge of -1 and 10 protons that each have a charge of $+1$.

B Janice sold 8 goldfish for a total of $10. Therefore, she made a profit of $2.

C At a bus stop, 8 people got off the bus and 10 people got on. This means that the number of passengers increased by 2.

D The temperature dropped 8 degrees and then another 10 degrees. The temperature is now -18 degrees.

5 In golf, each hole has a score called par, which is the number of strokes a good golfer should take to get the ball in the hole. Scores that are under par are represented by a negative number. The table shows the golf scores for team members in a golf tournament. If the team's total score is -32, what is Curran's score?

Golfer	Score
Rose	-9
Garcia	-15
Curran	?

Answer _____

6 Austin is watching a football game. His team loses 9 yards and then gains 5 yards. He doesn't watch the next play, but afterwards he sees that his team now has a total loss of 1 yard. How many yards did the team gain or lose on the play Austin missed?

Answer _____

B. Cognitive Challenge for All Learners at All Levels of Language Proficiency

1) Do materials present an opportunity for language learners to engage in various cognitive functions (higher order thinking skills from Bloom's taxonomy) regardless of their language level? **Yes** No

2) Are opportunities for engaging in higher order thinking systematically addressed in the materials? **Yes** No

Justification: Provide examples from materials as evidence to support each "yes" response for this section. Provide descriptions, not just page numbers.

1) Opportunities for language learners at all proficiency levels to engage in various cognitive functions are found throughout the Ready Mathematics program. The program uses a combination of the hierarchies of learning from Webb's Depth of Knowledge (DOK) and Bloom's taxonomy. The lessons all have both content and language objectives and the language objectives include the cognitive functions for the lesson. See an example below from Lesson 3, where students will, among other things, be explaining and justifying:

Language Objectives

- Read to understand everyday uses of positive and negative numbers.
- Explain models for adding integers using precise academic and mathematical language.
- Create generalizations about finding the sign of the sum of integers in speaking and writing.
- Justify answers by showing work and explaining solutions in complete sentences.
- Read and respond in writing to problems involving addition and subtraction of integers.

For language learners, the differentiated instruction charts allow the teacher to differentiate the language and cognitive functions for students depending on proficiency level. See an example form Lesson 3, where the students at levels 4-5 will justify their methods for solving a problem. But students at levels 1-3 will use sentence frames to help explain how they solved the problem:

Prepare for Day 4: Use with *Practice: Pair/Share*

ELP Levels 1–3	ELP Levels 2–4	ELP Levels 4–5
Speaking/Listening Form pairs. Support students as they discuss their solutions to the ***Practice*** problems with a partner by providing the following linguistic support: • What is your answer for problem ____? • My answer is ____. • How did you solve the problem? • I solved the problem by ____. Then read the ***Pair/Share*** bubble next to the problem aloud as students follow along. Ask students to signal when they have an idea. Co-create sentence frames for pairs to use as they answer the questions such as: • You can represent ____ with negative numbers.	**Speaking/Listening** Support students as they discuss their solutions to the ***Practice*** problems with a partner by reminding them to use sequencing words such as *first, next,* and *then* to describe their solutions. As one partner describes his or her method, ask the other partner to visualize the steps the speaker is describing, or create a mental picture. Then ask the listener to paraphrase the speaker's explanation. Have partners take turns reading the ***Pair/Share*** bubbles after each problem. For additional support, adapt the ***Co-Constructed Word Bank*** routine by asking partners to list terms they might use in their discussions.	**Speaking/Listening** Have partners compare answers and discuss solutions to the ***Practice*** problems. If partners used different methods, have them compare strategies and share why they solved the problem in the way that they did. If partners used the same method, have them work together to solve the problem in a different way. After partners have compared their solution to a problem, have them discuss the ***Pair/Share*** bubble that follows. Remind students to incorporate math and academic vocabulary such as *describe, represent, difference between,* and *negative numbers*.

2) Opportunities to engage in higher order thinking are systematically addressed throughout the materials. The introductory section of the Teacher Resource Book contains a chart outlining the DOK levels and Bloom's cognitive functions, along with a description of the types of activities/behaviors students would be expected to do at these levels. An example of this chart is seen here:

Cognitive Rigor and *Ready*®

The following table combines the hierarchies of learning from both Webb and Bloom. For each level of hierarchy, descriptions of student behaviors that would fulfill expectations at each of the four DOK levels are given. For example, when students compare solution methods, there isn't a lower-rigor (DOK 1 or 2) way of truly assessing this skill.

Depth of Thinking (Webb) + Type of Thinking (Revised Bloom)	DOK Level 1 Recall & Reproduction	DOK Level 2 Basic Skills & Concepts	DOK Level 3 Strategic Thinking & Reasoning	DOK Level 4 Extended Thinking
Remember	• Recall conversations, terms, facts			
Understand	• Evaluate an expression • Locate points on a grid or number on number line • Solve a one-step problem • Represent math relationships in words, pictures, or symbols	• Specify, explain relationships • Make basic inferences or logical predictions from data/observations • Use models/diagrams to explain concepts • Make and explain estimates	• Use concepts to solve non-routine problems • Use supporting evidence to justify conjectures, generalize, or connect ideas • Explain reasoning when more than one response is possible	• Relate mathematical concepts to other content areas, other domains • Develop generalizations of the results obtained and the strategies used and apply them to new problem situations
Apply	• Follow simple procedures • Calculate, measure, apply a rule (e.g., rounding) • Apply algorithm or formula • Solve linear equations • Make conversions	• Select a procedure and perform it • Solve routine problem applying multiple concepts or decision points • Retrieve information to solve a problem • Translate between representations	• Design investigation for a specific purpose or research question • Use reasoning, planning, and supporting evidence • Translate between problem and symbolic notation when not a direct translation	• Initiate, design, and conduct a project that specifies a problem, identifies solution paths, solves the problem, and reports results
Analyze	• Retrieve information from a table or graph to answer a question • Identify a pattern/trend	• Categorize data, figures • Organize, order data • Select appropriate graph and organize and display data • Interpret data from a simple graph • Extend a pattern	• Compare information within or across data sets or texts • Analyze and draw conclusions from data, citing evidence • Generalize a pattern • Interpret data from complex graph	• Analyze multiple sources of evidence or data sets
Evaluate			• Cite evidence and develop a logical argument • Compare/contrast solution methods • Verify reasonableness	• Apply understanding in a novel way, provide argument or justification for the new application
Create	• Brainstorm ideas, concepts, problems, or perspectives related to a topic or concept	• Generate conjectures or hypotheses based on observations or prior knowledge and experience	• Develop an alternative solution • Synthesize information within one data set	• Synthesize information across multiple sources or data sets • Design a model to inform and solve a practical or abstract situation

The lessons also have a "Differentiated Instruction" section where there are ideas for modifying activities based on the student's level. An example of a "Challenge Activity" is seen here, from Lesson 10, where students will be interpreting and explaining:

▶ Challenge Activity

Develop and interpret a proportional relationship.

Materials: graph paper

Students will develop and interpret a proportional relationship from a point on a coordinate plane.

Have students plot one point such as (3, 6) or (5, 2) on a coordinate plane. They should connect the origin and their point and extend the line to the edge of the paper. Have them identify several other points on the line and enter the coordinates in a table with rows labeled *x* and *y*.

Have students work individually to find the following:

- the ratio of *x* to *y* in simplest form for each point
- the constant of proportionality
- an equation that relates *x* and *y*
- a real-world situation that could be modeled by their data

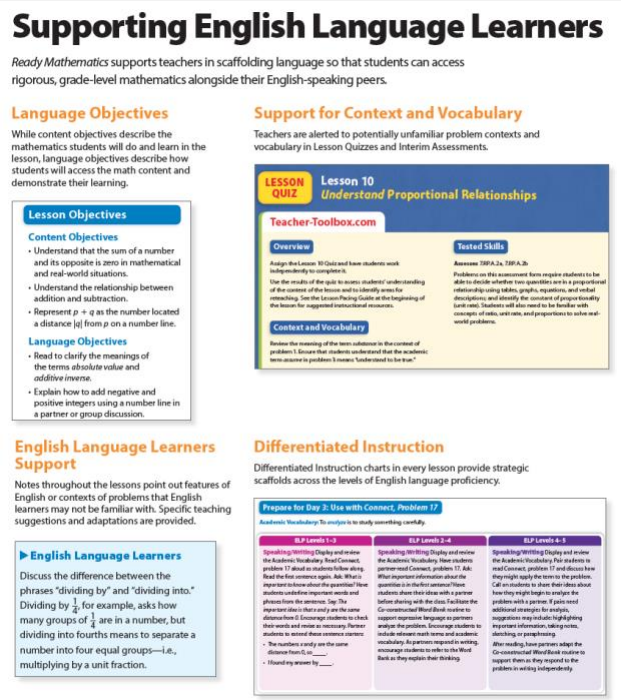
Have students share their work in small groups. They should explain how the graph, the table, the equation, and the real-world situation are related.

C. Supports for Various Levels of Language Proficiency

1) Do the materials provide scaffolding supports for students to advance within a proficiency level?	**Yes**	No
2) Do the materials provide scaffolding supports for students to progress from one proficiency level to the next?	**Yes**	No
3) Are scaffolding supports presented systematically throughout the materials?	**Yes**	No

Justification: Provide examples from materials as evidence to support each "yes" response for this section. Provide descriptions, not just page numbers.

1) The Ready Mathematics materials provide scaffolding supports for students to advance within a proficiency level. The structure of each lesson provides language objectives, modeled and guided instruction, guided practice, then independent practice to support and then gradually release the responsibility to the students. Typical supports include self-checks, language frames for discussions and writing activities, visuals, graphic organizers, models, cooperative learning and hands-on learning. The Teacher Resource Book, page A24, describes the supports the program offers specifically so teachers can scaffold for English language learners:



Supporting English Language Learners

Ready Mathematics supports teachers in scaffolding language so that students can access rigorous, grade-level mathematics alongside their English-speaking peers.

Language Objectives

While content objectives describe the mathematics students will do and learn in the lesson, language objectives describe how students will access the math content and demonstrate their learning.

Lesson Objectives

Content Objectives

- Understand that the sum of a number and its opposite is zero in mathematical and real-world situations.
- Understand the relationship between addition and subtraction.
- Represent $p + q$ as the number located a distance $|q|$ from p on a number line.

Language Objectives

- Read to clarify the meanings of the terms *absolute value* and *additive inverse*.
- Explain how to add negative and positive integers using a number line in a partner or group discussion.

Support for Context and Vocabulary

Teachers are alerted to potentially unfamiliar problem contexts and vocabulary in Lesson Quizzes and Interim Assessments.

LESSON QUIZ — Lesson 10 *Understand* Proportional Relationships

Teacher-Toolbox.com

Overview

Assign the Lesson 10 Quiz and have students work independently to complete it.

Use the results of the quiz to assess students' understanding of the content of the lesson and to identify areas for reteaching. See the Lesson Pacing Guide at the beginning of the lesson for suggested instructional resources.

Tested Skills

Assesses 7.RP.A.2a, 7.RP.A.2b

Problems on this assessment form require students to be able to decide whether two quantities are in a proportional relationship using tables, graphs, equations, and verbal descriptions; and identify the constant of proportionality (unit rate). Students will also need to be familiar with concepts of ratio, unit rate, and proportions to solve real-world problems.

Context and Vocabulary

Review the meaning of the term *substance* in the context of problem 5. Ensure that students understand that the academic term *assume* in problem 5 means "understand to be true."

English Language Learners Support

Notes throughout the lessons point out features of English or contexts of problems that English learners may not be familiar with. Specific teaching suggestions and adaptations are provided.

▶ English Language Learners

Discuss the difference between the phrases "dividing by" and "dividing into." Dividing by $\frac{1}{2}$, for example, asks how many groups of $\frac{1}{2}$ are in a number, but dividing into fourths means to separate a number into four equal groups—i.e., multiplying by a unit fraction.

Differentiated Instruction

Differentiated Instruction charts in every lesson provide strategic scaffolds across the levels of English language proficiency.

Prepare for Day 3: Use with *Connect, Problem 17*

Academic Vocabulary: To *analyze* is to study something carefully.

ELP Levels 1–3	ELP Levels 2–4	ELP Levels 4–5
Speaking/Writing Display and review the Academic Vocabulary. Read *Connect*, problem 17 aloud as students follow along. Read the first sentence again. Ask: *What is important to know about the quantities?* Have students underline important words and phrases from the sentence. Say: *The important idea is that p and q are the same distance from 0.* Encourage students to check their words and revise as necessary. Partner students to extend these sentence starters: • The numbers p and q are the same distance from 0, so ____. • I found my answer by ____.	Speaking/Writing Display and review the Academic Vocabulary. Have students partner-read *Connect*, problem 17. Ask: *What important information about the quantities is in the first sentence?* Have students share their ideas with a partner before sharing with the class. Facilitate the Co-constructed Word Bank routine to support expressive language as partners analyze the problem. Encourage students to include relevant math terms and academic vocabulary. As partners respond in writing, encourage students to refer to the Word Bank as they explain their thinking.	Speaking/Writing Display and review the Academic Vocabulary. Pair students to read *Connect*, problem 17 and discuss how they might apply the term to the problem. Call on students to share their ideas about how they might begin to analyze the problem with a partner. If pairs need additional strategies for analysis, suggestions may include highlighting important information, taking notes, sketching, or paraphrasing. After reading, have partners adapt the Co-constructed Word Bank routine to support them as they respond to the problem in writing independently.

2) The materials provide scaffolding supports for students to progress from one proficiency level to the next. The English Language Development section suggests lesson specific scaffolds at each of the three proficiency level bands, easily allowing the students to progress through the proficiency levels.

3) Scaffolding supports are presented systematically throughout the materials. Below are some examples of various supports which are representative of those found throughout the materials:

The Units begin with a preview/self-check:

Self Check

Before starting this unit, check off the skills you know below. As you complete each lesson, see how many more you can check off!

I can:	Before this unit	After this unit
add and subtract positive and negative integers, for example: $-3 + (-4) = -7$	☐	☐
multiply and divide positive and negative integers, for example: $-2 \cdot (-4) = 8$	☐	☐
add and subtract rational numbers, for example: $-2.5 + 3.8 = 1.3$	☐	☐
multiply and divide rational numbers, for example: $-\frac{1}{4} \div \frac{1}{3} = -\frac{3}{4}$	☐	☐
solve word problems with rational numbers	☐	☐

Continuing to preview the Unit, the students work in pairs to build vocabulary:

Unit 1
Preview the Unit

Review Words

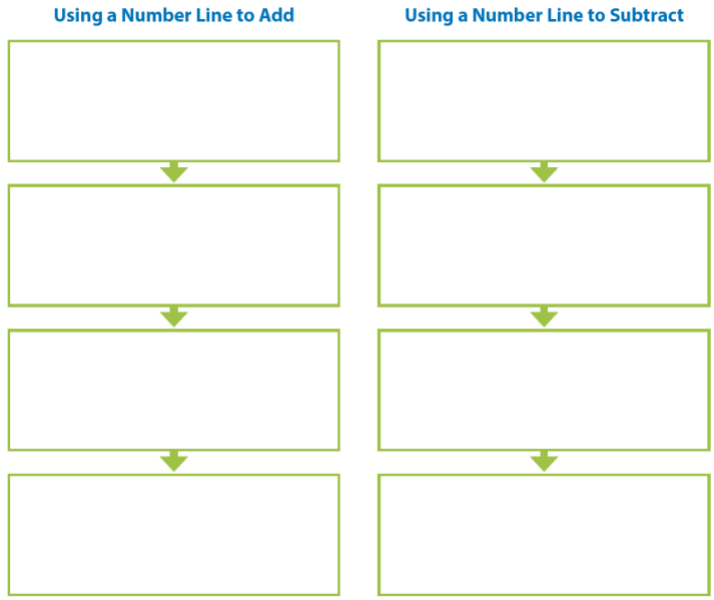
negative	operation
positive	system

Build Your Vocabulary

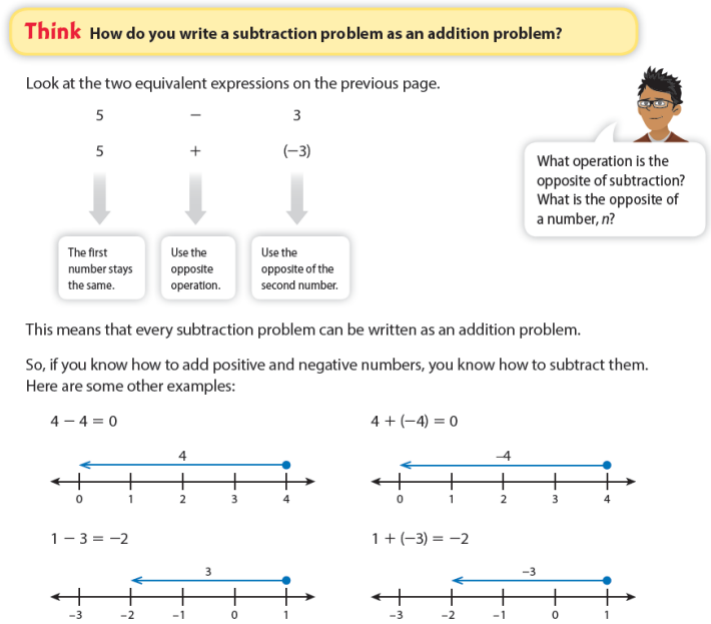
Below are words you may know. These words have an everyday meaning and a math meaning. If you don't know the term, write "I don't know yet." Discuss the term with a partner and together write a definition and an example.

Term	Everyday Meaning or Example	Math Meaning or Example
positive		
negative		
system		
operation		

Students also will see graphic organizers:



The lessons provide visual support:



D. Accessibility to Grade Level Content

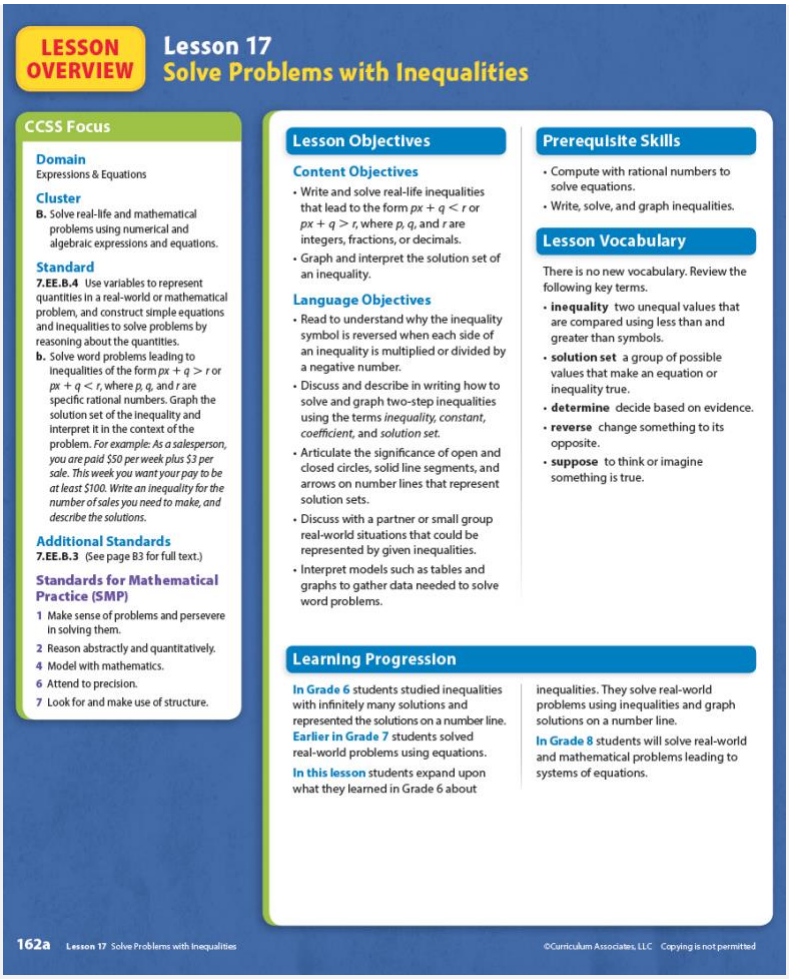
1) **Is linguistically and developmentally appropriate grade-level content present in the materials?** **Yes** No

2) **Is grade-level content accessible for the targeted levels of language proficiency?** **Yes** No

3) **Is the grade-level content systematically presented throughout the materials?** **Yes** No

Justification: Provide examples from materials as evidence to support each "yes" response for this section. Provide descriptions, not just page numbers.

1) The Ready Mathematics program is organized by grade-level (6-8) and each lesson corresponds to one or more grade level Common Core State Standards (CCSS) for Math. All four language domains are practiced within each lesson. The Teacher Resource Book outlines what the CCSS focus is for the upcoming lesson, as well as a description called "Learning Progression," which discusses what the students have learned in the previous grade, earlier in the grade they are currently in, and what they will be doing in the upcoming grade. See an example here, from Lesson 17:



LESSON OVERVIEW

Lesson 17
Solve Problems with Inequalities

CCSS Focus

Domain
Expressions & Equations

Cluster
B. Solve real-life and mathematical problems using numerical and algebraic expressions and equations.

Standard
7.EE.B.4 Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.
b. Solve word problems leading to inequalities of the form $px + q > r$ or $px + q < r$, where p, q, and r are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem. *For example: As a salesperson, you are paid $50 per week plus $3 per sale. This week you want your pay to be at least $100. Write an inequality for the number of sales you need to make, and describe the solutions.*

Additional Standards
7.EE.B.3 (See page B3 for full text.)

Standards for Mathematical Practice (SMP)
1 Make sense of problems and persevere in solving them.
2 Reason abstractly and quantitatively.
4 Model with mathematics.
6 Attend to precision.
7 Look for and make use of structure.

Lesson Objectives

Content Objectives
- Write and solve real-life inequalities that lead to the form $px + q < r$ or $px + q > r$, where p, q, and r are integers, fractions, or decimals.
- Graph and interpret the solution set of an inequality.

Language Objectives
- Read to understand why the inequality symbol is reversed when each side of an inequality is multiplied or divided by a negative number.
- Discuss and describe in writing how to solve and graph two-step inequalities using the terms *inequality, constant, coefficient,* and *solution set.*
- Articulate the significance of open and closed circles, solid line segments, and arrows on number lines that represent solution sets.
- Discuss with a partner or small group real-world situations that could be represented by given inequalities.
- Interpret models such as tables and graphs to gather data needed to solve word problems.

Prerequisite Skills
- Compute with rational numbers to solve equations.
- Write, solve, and graph inequalities.

Lesson Vocabulary
There is no new vocabulary. Review the following key terms.
- **inequality** two unequal values that are compared using less than and greater than symbols.
- **solution set** a group of possible values that make an equation or inequality true.
- **determine** decide based on evidence.
- **reverse** change something to its opposite.
- **suppose** to think or imagine something is true.

Learning Progression
In Grade 6 students studied inequalities with infinitely many solutions and represented the solutions on a number line. **Earlier in Grade 7** students solved real-world problems using equations.
In this lesson students expand upon what they learned in Grade 6 about inequalities. They solve real-world problems using inequalities and graph solutions on a number line.
In Grade 8 students will solve real-world and mathematical problems leading to systems of equations.

162a Lesson 17 Solve Problems with Inequalities ©Curriculum Associates, LLC Copying is not permitted

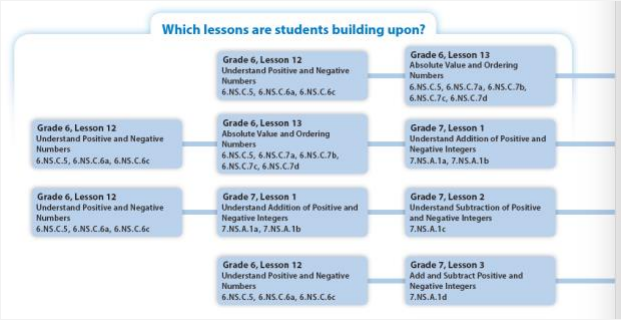
2) Grade level content is accessible at all levels of language proficiency. The materials have an English Language Development section in the Teacher Resource Book that differentiates the language but maintains the same rigor and content for all levels. See an example here, from Lesson 17, where the students will be working with the concept of *solution set:*

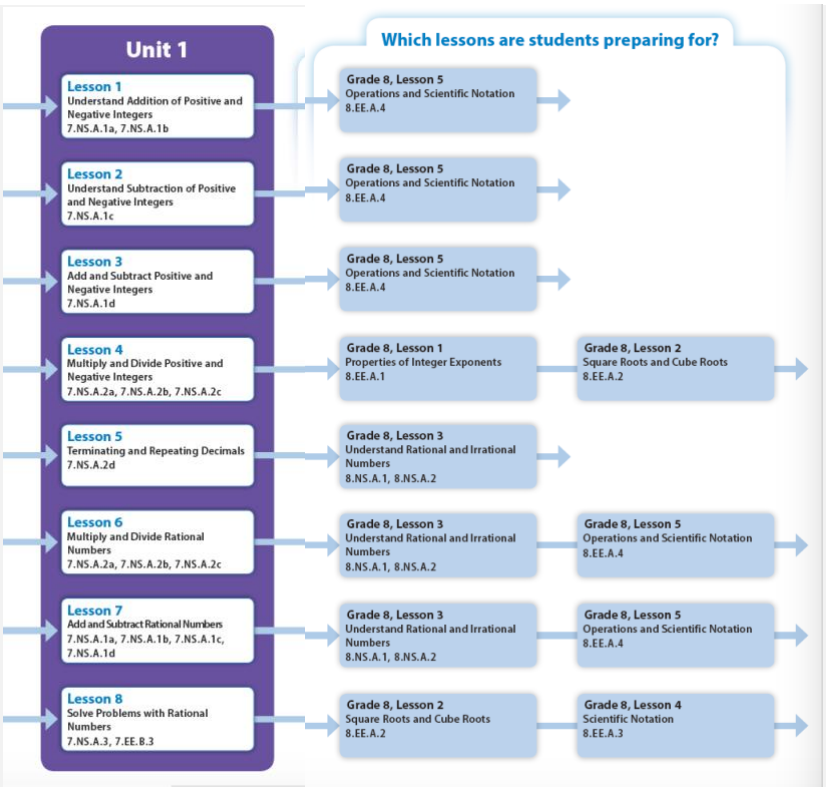
Prepare for Day 2: Use with *Connect It*

Math Term: When there is more than one possible answer to a problem, the group of answers is called a *solution set*.

ELP Levels 1–3	ELP Levels 2–4	ELP Levels 4–5
Speaking/Writing Display and discuss the term *solution set*. Use the number line model on the previous page to illustrate the definition. Read ***Connect It*** as a class. Display sentence frames for problems 2–3: • The price of the sneakers plus the cost of *p* pairs of socks must be less than or equal to sixty dollars. • First, subtract the constant from both sides of the inequality and then divide both sides by the coefficient. Start an anchor chart of symbols and their meanings that students will be using in this lesson, such as ≤, ≥, and a closed circle. Add to it throughout the lesson.	**Speaking/Writing** Display and discuss the term *solution set*. Use the number line model on the previous page for support. Read ***Connect It*** as a class. For problems 2 and 3, refer back to the inequality in ***Model It*** and use the information to co-write answers with students. Before completing problems 4 and 5, review what it means for a solution to be reasonable. For problem 6, use the ***Turn and Talk*** routine as partners take turns describing the solution set as indicated on the number line in ***Model It***. Then have partners work together to co-write a response.	**Speaking/Writing** Have students analyze the term *solution set* to approximate its meaning and then compare students' approximate definitions to the actual meaning. Read ***Connect It*** as a class. Pair students to answer the problems using a Think-Pair-Write framework. First, have students think about the answer, then share their ideas with a partner. Students can then use their original ideas or any new information they learned to write a response using complete sentences. Call on students to share their answers with the class.

3) Grade level content is presented systematically throughout the program. Before each unit is a comprehensive flow chart of the lessons the students have already been through and are building upon, then the lessons in the current unit, then the lessons the students are preparing for. Each cell of the flow chart lists the grade level, lesson number, lesson topic, and standard(s) for the lesson. See an example here:





The units all follow this format.

E. Strands of Model Performance Indicators

1) **Do materials include a range of language functions?** **Yes** No

2) **Are the language functions incorporated into a communicative goal or activity?** **Yes** No

3) **Do the language functions support the progression of language development?** **Yes** No

Justification: Provide examples from materials as evidence to support each "yes" response for this section. Provide descriptions, not just page numbers.

1) The Ready Mathematics materials include a range of language functions throughout each lesson. Language functions like discuss, explain, predict, draw, paraphrase, label, compare, and summarize are used throughout the lesson and are modeled in language frames for academic discussions.

2) The language functions described above that are found in the program are incorporated

into communicative goals or activities in a consistent manner throughout the materials. See below several examples where students are asked to complete, explain, identify, and discuss:

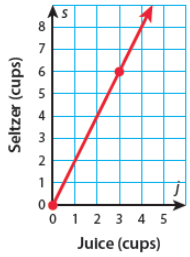
Try It Another Way **Work with your group to determine whether the equation represents a proportional relationship. Explain your choice. You may want to make a table similar to those in Problems 5 and 6 or a graph similar to that in problem 8 on separate sheet of paper to support your reasoning.**

10 $y = 2x + 4$ _____

11 $y = 2x$ _____

Model It **You can use a graph to represent the relationship.**

Graph the point (3, 6) and connect it to the point (0, 0). Identify points on the line.



Connect It **Now you will solve the problem from the previous page using equations.**

2 What number represents the amount Lisa owes each friend? _____

3 Is the amount positive or negative? Why?

_____

_____

4 How many friends does Lisa owe? _____

5 Complete the phrase to show how much Lisa owes.

_____ groups of _____

6 Adding 6 groups of (−2) is the same as _____ 6 and (−2).

7 What number represents Lisa's total debt? _____

8 Explain how you can use the rules of multiplying a positive number by a negative number to check that your answer has the correct sign.

_____

_____

3) The language functions support the progression of language development throughout

the Ready Mathematics materials. Language functions are appropriate for the identified proficiency levels and build on each other as the students progress through the levels. In the English Language Development chart seen here, the students will progress from copying to paraphrasing to summarizing:

Prepare for Day 1: Use with *Find Out More*

ELP Levels 1–3	ELP Levels 2–4	ELP Levels 4–5
Reading/Listening Have students create in their Math Journals a three-column table with the headings *Term, Meaning,* and *Picture*. Ask students to preview ***Find Out More*** by finding the bold words and copying them into the *Term* column. Read aloud ***Find Out More***. Pause after each definition is read. Guide students to write the definition in the *Meaning* column and draw a sketch in the *Picture* column. Use the ***Act It Out*** routine to create gestures for terms such as tracing a large, invisible circle for *circumference* or holding both arms out wide to represent *diameter*. Compile ideas in a class graphic organizer. Ask students to identify formulas to add to a Formula Anchor Chart. Include $C = 2\pi r$.	**Reading/Listening** Have students create in their Math Journals a three-column table with the headings *Term, Meaning,* and *Picture*. Ask students to preview ***Find Out More*** by finding the bold words and copying them into the *Term* column. Pair students to read ***Find Out More***. Have partners take turns reading and paraphrasing each paragraph using the ***In Your Own Words*** routine. If the paragraph contains a bold term, have them add the information to their graphic organizer. Support understanding of the relationship between the formulas $C = \pi d$ and $C = 2\pi r$ with this sentence frame: • The radius is one-half the diameter, so the diameter is twice as long as/two times/double the radius.	**Reading/Listening** Have students preview ***Find Out More***. Have partners use the ***Turn and Talk*** routine to discuss their predictions about what they will learn. Have students read the ***Find Out More*** independently. Remind them to underline, circle, highlight, or take notes in the margin to deepen comprehension. After reading, have partners work together to create a graphic organizer of their choice that summarizes important information. Possible graphic organizers include: table, diagram, web, etc. Post partners' graphic organizers in the room and allow students to circulate to view one another's work.