Protocol for Review of Instructional Materials for ELLs 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,
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

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PRIME Part 1: Provide Information about Materials

Provide information about each title being correlated.

Publication Title(s): Ready Classroom Mathematics, Grades 6-8

Publisher: Curriculum Associates

Materials/Program to be Reviewed: Ready Classroom Mathematics, Grades 6-8

Tools of Instruction included in this review: Ready Classroom Mathematics, Teacher Guides and Student Worktexts grades 6, 7, and 8

Intended Teacher Audiences: 6-8 Grade Math Teachers that serve ALL students and English language learners

Intended Student Audiences: All students in grades 6, 7, and 8

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

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

☐ WIDA Spanish Language Development Standards

X WIDA English Language Proficiency Standards

WIDA Language Proficiency Levels included: Language of Mathematics, Language of Science, Language of Social Studies, Language of English Language Arts and Social and Instructional Language

Most Recently Published Edition or Website:
https://www.curriculumassociates.com/products/ready-classroom-mathematics/overview?utm_source=Google_RCM-GA1234&utm_medium=onlinewebsite_Display&utm_content=RCMLeadGen&utm_campaign=7010a000002pizb&gclid=EA1aIQobChMI0bKPu cnH6A1VDuDICH3MdQ9sEAAYASAAEgIKDvD_BwE

In the space below explain the focus or intended use of the materials: Our mission is to help students become strong, independent mathematical thinkers. Ready Classroom Mathematics takes a unique, yet proven approach that builds upon research-based practices that get results. Through a blend of purposeful print and digital components, this intentional design makes mathematics accessible, increases student engagement, and builds confidence. Everything works together to support teachers and help students connect to mathematics in new ways.
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 Yes No materials?

   2) Are the student assets and contributions systematically Yes No considered 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 Classroom Mathematics considers student assets and contributions in the
   materials. Each lesson includes a section that activates students' background knowledge.
   This section is named “Connect to Culture,” and gives students the opportunity to connect
   with and leverage their diverse backgrounds and experiences. It engages students in
   sharing what they know about contexts before the teacher shares new information with
   them. The materials also include a letter to families which explains what students will be
   learning about and how to engage with their children in the new learning being taught. An
   additional section that considers students assets and contributions in the materials is the
   “Explore” page in the student book and the “Discuss It” section in the teacher's guide. This
   draws on a student's prior knowledge and helps the teacher learn what background
   knowledge the students have around a particular concept.
Lesson 2

Overview | Work with Single Rigid Transformations in the Coordinate Plane

Connect to Culture

Try It. Perhaps you have seen sheets of stickers in a stationery store, where the same design is repeated over and over to cover a sheet. Graphic designers use computer graphics programs to create original sticker designs, but they do not have to re-draw the design each time to create a new sticker on the page. Instead, they can use the copy and paste feature in their graphics program to create as many copies as they need. Graphics programs also allow the designer to move each copy around on the page. Ask students to think about how they could create a page of 30 stickers in the most efficient way possible. What kinds of transformations would they use?

Session 2

Try It. Ask if any students have been to a Chinese New Year celebration. Ask them to describe the foods, decorations, and activities involved in the celebration they attended. The festival of the Chinese New Year is a 15-day festival celebrated in Chinese communities in the United States. The date of the holiday varies due to phases of the moon but is normally sometime between January 21 and February 30. Festivities begin during a new moon and last until the following full moon. Celebrations often include a feast of traditional Chinese foods, fireworks, red clothes, and decorations such as paper dragon puppets. A parade is held near the end of each year’s event in which people hang glowing lanterns as well as a colorful dragon, which symbolizes good luck in the culture.

Session 3

Practice Example. Some toy model airplanes have a propeller that is powered by a rubber band. While holding the plane steady, the propeller is turned to wind up the rubber band over and over. Then, when the propeller is released, the rubber band snaps back into shape. This action rotates the propeller in the opposite direction, powering the flight of the toy plane. In fact, Orville and Wilbur Wright played with a toy like this when they were children, and it may have inspired them to achieve the first powered, sustained, and controlled airplane flight in 1903. Encourage students to share their experiences building models of airplanes or other vehicles.
Grade 8, Lesson 2, Connect to Family and Community

Connect to Family and Community

After the Explore session, have students use the Family Letter to let their families know what they are learning and to encourage family involvement.

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Grade 6, Lesson 1, Explore

Explore The Area of a Parallelogram

Previously, you learned how to find the area of a rectangle. In this lesson, you will learn how to find the area of a parallelogram.

Use what you know to try to solve the problem below.

Kenji and Alec are making paper kites for a kite fight. Kenji's kite is a rectangle and Alec's kite is a parallelogram that is not a rectangle. Each boy draws a model of his kite on grid paper. Does Alec's kite use more paper than Kenji's kite?

**TRY IT**

**Math Taskkit** grid paper, tracing paper, unit tiles

**SAMPLE A**

Kenji’s kite is 5 x 4 = 20

Alec’s kite is a parallelogram that is not a rectangle. Each boy draws a model of his kite on grid paper. Does Alec’s kite use more paper than Kenji’s kite?

**SAMPLE B**

The parallelagram covers the same number of unit squares as the rectangle. So, Alec’s kite does not use more paper than Kenji’s kite.

**DISCUSS IT**

Ask: How would you explain what the problem is asking in your own words?

Share: The problem is asking...
**DISCUSS IT**

**Support Partner Discussion**
After students work on Try It, have them respond to Discuss It with a partner and then explain their work on Try It. Listen for understanding that:
- both models have the same area.
- the parallelogram can be decomposed and reassembled into a rectangle.

**Facilitate Whole Class Discussion**
Call on students to share selected strategies. After each strategy, allow individual think time for students to process the ideas and ask questions.

Guide students to **Compare and Connect** the representations. If the discussion lags, have students turn and talk about other ways to find the area of the figures.

**ASK**  How do [student name]'s and [student name]'s strategies show that both kites use the same amount of paper?

**LISTEN FOR**  Both strategies show that the kites use the same number of unit squares, so both kites use the same amount of paper.

2)  The student assets and contributions are systematically considered throughout the materials. In the beginning of every lesson in student books grades 6-8 students have an opportunity to connect with and leverage their diverse backgrounds and experiences through the letter to families. See examples below.
LESSON 7
Overview | Add, Subtract, and Multiply Multi-Digit Decimals

Connect to Culture

Use these activities to connect with and leverage the diverse backgrounds and experiences of all students. Engage students in sharing what they know about contexts before you add the information given here.

SESSION 1

Try It: Ask students to raise their hands if they have ever been on a swim team. At the 2008 Summer Olympics, a U.S. swimmer won a race by one-hundredth of a second. The win was confirmed by photo-finish technology, which is used to record images of an event’s finish at 100 frames per second. If any students have ever been in or witnessed a close race, ask them to share their experiences.

SESSION 2

Try It: Ask students to stand up if they have ever wondered why a dime is worth more than a nickel even though it is smaller and weighs less. The first U.S. coins were worth their melt value, or the amount of metal they contained. Dimes were minted out of ten cents’ worth of silver. Nickels were minted out of five cents’ worth of copper and nickel. The two metals for nickels were much cheaper than silver, so the coins had to be larger. Ask students to share questions they have about U.S. currency. Students can research answers if time allows.

SESSION 3

Try It: Ask students to raise their hands if they have ever taken a pet to a veterinarian. Veterinarians can work with dogs, cats, and other household pets. Some veterinarians work with farm animals, while others work with exotic birds, fish, or reptiles in clinics, zoos, and aquariums. They can also specialize in a number of different areas such as surgery, ophthalmology, and dentistry. Survey students to see if they have ever considered becoming a veterinarian as their career and what types of veterinary careers seem most interesting to them.

SESSION 4

Apply It: Problem 3: Ask students to stand up if they have ever visited a horse farm and helped feed the horses. A horse’s diet should be made up mostly of forage, such as grass, alfalfa, or hay. The rest is made up of grains, such as oats or barley, or feed pellets. Horses have small stomachs compared to their large bodies. Considering they can eat up to 25 pounds of food a day, horses spend a lot of time eating! Ask students to guess how long it would take them to eat 25 pounds of food. For perspective, mention that the average hamburger contains a quarter pound of meat.

CULTURAL CONNECTION

Alternate Notation: The United States, United Kingdom, and Australia are a few of the countries that use a decimal point to separate the whole-number and fractional parts of a decimal. Most countries in Europe and South America use decimal commas instead. Some countries, like Canada, use both notations! Encourage students who have experience with using commas for decimal notation to share what they know with the class.
Connect to Family and Community

After the Explore session, have students use the Family Letter to let their families know what they are learning and to encourage family involvement.
LESSON 7 | SESSION 1
Explore Adding and Subtracting Multi-Digit Decimals

Purpose
• Explore the idea that you can add and subtract multi-digit decimals using place value.
• Understand that aligning multi-digit decimals by place value can make it easier to add and subtract.

### TRY IT
Make Sense of the Problem
See Connect to Culture to support student engagement. Before students work on Try It, use Co-Craft Questions to help them make sense of the problem. If students need support in getting started, lead a group discussion of the quantities in the problem. Then have students turn and talk to compare their questions and revise before sharing the questions with the class.

### DISCUSS IT
Support Partner Discussion
After students work on Try It, have them respond to Discuss It with a partner. Listen for understanding of:
• 24.138 and 25.393 as addends.
• the total lap time as the sum.
• the need to consider place value when adding.

Common Misconception: Listen for students who do not address the decimal point while adding. As students share their strategies, ask them to use whole-number estimates to determine the reasonableness of their answers. Discuss the meaning of the decimal point and the numbers in the context of the Try It problem.

Select and Sequence Student Strategies
Select 2–3 samples that represent the range of student thinking in your classroom.
Here is one possible order for class discussion:
• (misconception) strategies that ignore the decimal point, leading to a whole-number answer in the ten-thousands
• base-ten blocks used to model 0.138 + 0.393 (flats used to represent tenths)
• expressions that show the decimals in expanded form
• place-value charts or tables to align by place value
• use of the vertical format of the standard algorithm
**LESSON 7 | SESSION 1**

**Explore**

**Facilitate Whole Class Discussion**

Call on students to share selected strategies. After each strategy, allow individual think time for students to process the ideas and ask any questions.

Guide students to **Compare and Connect** the representations. Prompt students to project their voices so everyone can hear while they explain how to add multi-digit decimals.

**ASK** How does [student name]’s model show using place value?

**LISTEN FOR** The model shows that ones are added to ones, tenths are added to tenths, hundredths are added to hundredths, and so on.

**CONNECT IT**

**1. Look Back** Look for understanding that multi-digit decimals can be added by lining up the numbers by place value.

**DIFFERENTIATION | RETEACH or REINFORCE**

**Hands-On Activity**

Use base-ten blocks to add and subtract multi-digit decimals.

If students are unsure about regrouping when adding decimals, then use this activity to have them model regrouping with base-ten blocks.

**Materials** For each pair: base-ten blocks (4 hundreds flats, 15 tens rods, 15 ones units)

- Distribute base-ten blocks and tell students that for modeling decimals, flats represent wholes, rods represent tenths, and units represent hundredths.
- Display the addition problem 1.3 + 2.96. Have students use base-ten blocks to model each addend. (1.3 = 1 flat and 3 rods: 2 flats, 9 rods, and 6 units)
- Have students demonstrate how to use base-ten blocks to find the sum by grouping the flats, the rods, and the units, and tell the total number of each type of block. (3 flats, 12 rods, and 6 units)
- Discuss how 12 rods, representing 12 tenths, can be exchanged for 1 flat and 2 rods, representing 1 whole and 2 tenths.
- Ask students to represent the new grouping of base-ten blocks using numbers and words. (1.4)
- Repeat with the subtraction problem 3.23 – 1.4. Encourage students to explain why it is necessary to exchange 1 flat for 10 rods, representing regrouping 1 whole for 10 tenths, in order to subtract the tenths.

**2. Look Ahead** Place value can help you add or subtract decimals. You add 25.395 and 4.184 to find fastest total time. You can subtract 24.338 from 25.395 to find how much faster Lattes wins the first lap than the second lap.

a. How could it help you to line up the decimals on their decimal points? Possible answer: Line up the decimals on their decimal points also lines up digits by place value.

b. What do you need to do before you can subtract the digits in the thousandths place in this problem? Explain. You need to regroup 1 hundredth as 10 thousandths because 2 thousandths is less than 1 thousandths.

c. Complete the equation.

9 hundredths + 3 thousandths = 6 hundredths + ___ thousandths

How much faster is Lattes’ time for the first lap than the second lap? How did you find your answer?

1.255 is. Possible explanation I used a place-value chart.

<table>
<thead>
<tr>
<th>Ones</th>
<th>Tenths</th>
<th>Hundredths</th>
<th>Thousandths</th>
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</thead>
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<tr>
<td>2</td>
<td>3</td>
<td>8</td>
<td>13</td>
</tr>
<tr>
<td>3</td>
<td>4</td>
<td>1</td>
<td>9</td>
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</table>

**3. Reflect** How do you use place value when adding and subtracting decimals? Possible answer: You need to add or subtract digits that have the same place value. To do this, you can line up digits by place value: tenths and tenths, hundredths and hundredths, and so on.

**CLOSE | EXIT TICKET**

**6. Reflect** Look for understanding that adding and subtracting multi-digit decimals requires that the digits be lined up by place value.

**Common Misconception** If students set up addition and subtraction of decimals by aligning all digits to the right, then ask them to apply their reasoning to a problem such as 5.4 + 3.214 in order to see that aligning numbers to the right does not always apply when adding and subtracting decimals.
DISCUSS IT

Support Partner Discussion
After students work on Try It, have them respond to Discuss It with a partner. Listen for understanding of:
- 24.138 and 25.393 as addends.
- the total lap time as the sum.
- the need to consider place value when adding.

Facilitate Whole Class Discussion
Call on students to share selected strategies. After each strategy, allow individual think time for students to process the ideas and ask any questions.

Guide students to Compare and Connect the representations. Prompt students to project their voices so everyone can hear while they explain how to add multi-digit decimals.

ASK How does [student name]’s model show using place value?
LISTEN FOR The model shows that ones are added to ones, tenths are added to tenths, hundredths are added to hundredths, and so on.
LESSON 7
Overview | Understand Addition with Negative Integers

Connect to Culture

Use these activities to connect with and leverage the diverse backgrounds and experiences of all students. Engage students in sharing what they know about contexts before you add the information given here.

SESSION 1

Model It  Some examples of video games are puzzle games, adventure games, and racing games. In some games, players collect or earn coins they can spend in the game. In other games, they collect and lose lives as they complete tasks. Have students share examples of scoring systems in the different types of video games they like to play.

SESSION 2

Model It  Ask students to raise their hands if they watch or play American football. Ask those students to describe how teams gain or lose yards during a play. In American football, two teams take turns playing offense and defense. At the start of a new play, the team playing offense tries to move the football forward from its starting position by throwing it or running with it. If they succeed, the team gains yards. However, the defense can force the ball behind its starting position. If this happens, the team playing offense is said to have lost yards on the play.

SESSION 3

Apply It  Problem 1  Ask if any students have lived in a place where temperatures are reported in Celsius. Ask these students what the temperature would be in degrees Celsius on a very hot day, a very cold day, or a nice, warm day. Celsius is a commonly used scale for measuring temperature in many countries. Other countries, such as the United States, use Fahrenheit to measure temperatures. On the Fahrenheit scale, 30° is a cold temperature, but on the Celsius scale 30° is very warm. A temperature of 30°C is the same as a temperature of 86°F.

Apply It  Problem 4  Orcas are not whales at all. They are actually the largest dolphins. They are social animals that travel in pods, or family groups. The groups can grow to have up to 50 members and 4 generational Orca stay with their mothers when they become adults. The oldest female orca is in charge, telling the pod when and where to feed. Ask students what benefits they can see in living with multiple generations of their family.
Connect to Family and Community

After the Explore session, have students use the Family Letter to let their families know what they are learning and to encourage family involvement.
Explore Addition with Negative Integers

Model It

1. Neva plays a video game. On her first turn, she gets 3 points. On her second turn, she loses 3 points. The expression $3 + (-3)$ represents her score after the two turns. You can use integer chips to find the sum of 3 and $-3$.

   a. The sum of any number and its opposite is 0. Another term for opposites is **additive inverses**. Since the sum of 1 and $-1$ is 0, 1 and $-1$ form a **zero pair**. Circle the zero pairs in the model.

   **See model.**

   b. How many points does Neva have after her second turn? 0

   c. What is $3 + (-3)$? 0

2. Neva starts the game over. The integer chips below represent the number of points she has after her first turn. Then she earns 5 points on her second turn.

   a. How many points does Neva have after her first turn? $-5$

   b. Draw chips to show the points Neva earns on her second turn. Then circle the zero pairs. **See model.**

   c. How many points does Neva have after her second turn? 0

   d. What is $(-5) + 5$? 0
Grade 7, Lesson 7, Discuss It

**DISCUSS IT**

**Support Partner Discussion**
After students complete problems 1 and 2, have them respond to Discuss It with a partner. Prompt them to think about the value of a positive chip and a negative chip.

Listen for understanding that:
- the value of a positive chip and a negative chip together is zero.
- $3 + (-3)$ can be read as *three plus negative three.*

**Facilitate Whole Class Discussion**
Prompt students to **Compare and Connect** the models for problems 1 and 2. To engage all students, ask them to turn and talk to answer the question below before calling on a few students to share their thinking with the class. As students present, call on others to say if they agree and how they might build on the answer.

**ASK** How are the models for the problems alike and different?

**LISTEN FOR** Both models show positive and negative integer chips with a sum of 0. The first model shows 3 positive and 3 negative integer chips. The second model shows 5 positive and 5 negative integer chips.

Grade 8, Lesson 7, Connect to Culture

**Connect to Culture**
- Use these activities to connect with and leverage the diverse backgrounds and experiences of all students. Engage students in sharing what they know about content before you add the information given here.

**SESSION 1**
- Try It: Ask students to think about roofs. Many of them are slanted. Do they know why? The slope of a roof has a direct impact on how well rainwater drains off of it. There are recommended materials for covering roofs based on the slope of the roof. For example, steep roofs can be covered with asphalt shingles, while flatter roofs can be made of concrete. Many concrete roofs have drainage systems that prevent water from pooling on the roof. In some cases, roofs may have a combination of materials. Teaching uses straw on other vegetation to cover a roof. This method has a surprisingly long lifespan. Ask students to list the steps of roof on homes and buildings in their area. Have students describe the unique roof structures they have seen.

**SESSION 2**
- Try It: Write students to tell the class about buildings and bridges they have seen with triangular features. The AutoMeda conference series, located on the Kanda Meda Institute's Saito Campus in Sweden, holds a 1,500-seat auditorium and an approximately 500-seat conference room. The triangular building elements, along with triangular glass windows and other triangular structural elements, are used for many scientific conferences, gala receptions, and needed lectures.

**SESSION 3**
- Apply It: Problem 3 asks students to share what experience with building or cutting boards have been around since the 18th century, when Planks were used to build ships into kegs using twisted rods. In the 18th century, iron was a precious material that was heated on a stove, but most people used their kitchen table or another flat surface, perhaps padded with a sheet, as an ironing surface. Then, in 1807, an African American woman named Sarah Bower patented an adjustable folding ironing board with a narrow, curved shape to make it easier to iron clothes. Modern ironing boards look a lot like her design.

**SESSION 4**
- Apply It: Problem 4 asks students to think about bicycle frames and design engineering. In the 1860s, a bicycle frame was designed with triangles. In the 1870s, there were two triangles positioned with a dihedral pattern in a diamond. This design was used since the 1860s. Triangles are a very strong design element because it is very difficult to make a triangle distort or collapse. A triangle distributes force efficiently to all of its sides. Encourage students to describe other structures they have seen that use triangles.
Connect to Family and Community

After the Explore session, have students use the Family Letter to let their families know what they are learning and to encourage family involvement.
Explore The Sum of the Angle Measures in a Triangle

Previously, you learned about the measures of angles formed by parallel lines and transversals. In this lesson, you will learn about angle measures of triangles.

Use what you know to try to solve the problem below.

An architect needs to know the angle measures of the roof shown in the photo. The triangle to the right models the shape of the roof. What is the sum of the angle measures of the triangle?

TRY IT Math Toolkit grid paper, straightedges

Possible work:

SAMPLE A

\[ m\angle 1 + m\angle 2 = 141^\circ \text{ and } m\angle 2 + m\angle 3 = 160^\circ \quad \leftarrow \text{ Alternate interior angles are congruent.} \]
\[ m\angle 1 + m\angle 2 + m\angle 2 + m\angle 3 = 301^\circ \]
\[ 180^\circ + m\angle 2 = 301^\circ \quad \leftarrow \angle 1, \angle 2, \text{ and } \angle 3 \text{ form a straight angle.} \]
\[ m\angle 2 = 121^\circ \]
\[ m\angle 4 + 160^\circ = 180^\circ \quad \leftarrow \angle 4 \text{ and the } 160^\circ \text{-angle form a linear pair. So, } m\angle 4 = 20^\circ. \]
\[ m\angle 5 + 141^\circ = 180^\circ \quad \leftarrow \angle 5 \text{ and the } 141^\circ \text{-angle form a linear pair. So, } m\angle 5 = 39^\circ. \]
\[ m\angle 2 + m\angle 4 + m\angle 5 = 121^\circ + 20^\circ + 39^\circ = 180^\circ \]

SAMPLE B

\[ m\angle 1 + 160^\circ = 180^\circ; m\angle 3 + 141^\circ = 180^\circ \quad \leftarrow \text{ same-side interior angles} \]
\[ \text{So, } m\angle 1 = 20^\circ \text{ and } m\angle 3 = 39^\circ. \]
\[ m\angle 1 + m\angle 2 + m\angle 3 = 180^\circ \quad \leftarrow \angle 1, \angle 2, \text{ and } \angle 3 \text{ form a straight angle.} \]
\[ 20^\circ + m\angle 2 + 39^\circ = 180^\circ, \text{ so } m\angle 2 = 121^\circ \]
\[ m\angle 4 = m\angle 1 = 20^\circ \text{ and } m\angle 5 = m\angle 3 = 39^\circ \quad \leftarrow \text{ alternate interior angles} \]
\[ m\angle 2 + m\angle 4 + m\angle 5 = 121^\circ + 20^\circ + 39^\circ = 180^\circ \]

DISCUSS IT

Ask: What did you do first to find the sum of the angle measures?

Share: First, I found the angle measures by . . .
DISCUSS IT

Support Partner Discussion
After students work on Try It, have them respond to Discuss It with a partner. Listen for understanding of:
- using alternate interior angles and/or same-side interior angles to find measures of certain angles.
- using supplementary angle relationships to find measures of certain angles.
- substituting known angle measures into equations to find measures of unknown angles.

Facilitate Whole Class Discussion
Call on students to share selected strategies. Before strategies are presented and discussed, remind students to be respectful when they disagree with another’s idea.

Guide students to Compare and Connect the representations. Encourage students to speak clearly and loudly as they present their responses.

**ASK** How did the strategies use angle relationships related to parallel lines?

**LISTEN FOR** The strategies used pairs of angles that were either congruent or supplementary, along with combinations of angles that form a linear pair to find the unknown measures.
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?**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

2) **Are the language features at the discourse dimension addressed systematically throughout the materials?**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>
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 discourse dimension in a consistent manner for all identified proficiency levels. Each lesson offers ideas that provide access to students at their individualized language development levels. The Teacher’s Edition calls attention to the academic language required for content and language learning. This is through the explanation of how Language and Discourse are used throughout the instructional materials. The Language and Discourse page in the Teacher’s Edition, points out how the features included support language and discourse. Please see in the example the Language Objectives, Preparation Stage, Explore Session, Try-Discuss-Connect Routine, Develop Academic Language and Discourse Cards. These features provide opportunities to extend conversations with other students. The pieces help students engage in productive struggle, participate in mathematical discourse and make connections between different models and solution strategies.

Example: Teacher’s Edition of Language and Discourse Features

<table>
<thead>
<tr>
<th>Feature</th>
<th>How This Supports Language and Discourse</th>
<th>Where to Find It</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language Objectives</td>
<td>Language Objectives indicate the language students are expected to understand and produce as they work on Lesson Objectives.</td>
<td>Teacher’s Guide</td>
</tr>
<tr>
<td>Unit: Prepare for . . .</td>
<td>Prepare for pages provide students with opportunities to activate prior knowledge while thinking about familiar math concepts that are important in the unit. These pages also begin a focus on general, all-purpose academic words and phrases.</td>
<td>Student Worktext, Teacher’s Guide</td>
</tr>
<tr>
<td>Explore Session: Prepare for . . .</td>
<td>Prepare for pages use graphic organizers to help students access prior knowledge and vocabulary they will build on in the lesson.</td>
<td>Student Worktext, Teacher’s Guide</td>
</tr>
<tr>
<td>Try-Discuss-Connect Routine</td>
<td>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.</td>
<td>Student Worktext, Teacher’s Guide</td>
</tr>
<tr>
<td>Develop Academic Language</td>
<td>Develop Academic Language supports students in understanding and using academic language words and sentences and in engaging in productive mathematical discourse.</td>
<td>Teacher’s Guide</td>
</tr>
<tr>
<td>Discourse Cards</td>
<td>Discourse Cards provide sentence starters and questions to help students initiate, deepen, and extend conversations with partners, small groups, or the whole class.</td>
<td>Teacher Digital Experience &gt; Ready Classroom Mathematics Teacher Toolbox</td>
</tr>
</tbody>
</table>
Grade 6, Program Overview

Example: Differentiated support for various levels of English proficiency

**Differentiated Instruction for English Learners**

Every session includes differentiated support for various levels of English proficiency.

---

**Levels 1-3: Reading/Speaking**

Support students by:
- **Level 1 (Emerging)**: Use simple, clear visuals to support understanding.
- **Level 2 (Beginning)**: Provide sentence starters to help with sentence construction.
- **Level 3 (Intermediate)**: Encourage students to rephrase questions and answers in their own words.

**Levels 4-5: Reading/Speaking**

Support students by:
- **Level 4 (Advanced)**: Encourage students to write from the text and formulate their own questions.
- **Level 5 (Proficient)**: Foster critical thinking by asking students to identify the main idea and support it with evidence from the text.

---

**Scaffolded language support for a specific problem is outlined.**

These suggestions for scaffolding and simplifying the language can be applied to other problems as well.
2. The language features at the discourse dimension are addressed systematically throughout the materials. Each student’s experience with the student support materials is organized for students to participate at a variety of English language proficiency levels throughout the materials including using academic language at the discourse level. The learning goals focus student attention to the unit of study and learning through content and language objectives. Each lesson is guided by the Try–Discuss–Connect Routine and a specific language goal which encourages academic language acquisition using discourse. This happens in every lesson in the materials grades 6-8. See an example from the Grade 6 materials below.
Example: A variety of English language proficiency levels throughout the materials
Example: Learning goals focus student attention to the unit of study and learning through content and language objectives.
Example: Each lesson is guided by the *Try–Discuss–Connect* instructional routine and a specific language goal which encourages academic language acquisition using discourse.

**LESSON 6 | SESSION 1**

**Explore Circumference of a Circle**

**Purpose**
- Explore the idea that a circle is defined by points that are equidistant from a fixed center point.
- Understand the linear measurements that describe circles, including diameter, radius, and circumference.

**START CONNECT TO PRIOR KNOWLEDGE**

**Possible Solutions**
- All are shapes that are two-dimensional or flat.
- The circle is the only shape without straight sides.
- The square and equilateral triangle both have equal side lengths.
- The square and right triangle both have right angles, although the right triangle has other angles as well.

**WHY?** Support students’ understanding of the properties of different shapes.

**TRY IT**

**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. Invite volunteers to describe the problem in their own words, including a description of the system. Ask: How do you think the irrigation system works? Where is the center point of the system?

**DISCUSS IT**

**Support Partner Discussion**
After students work on **Try It**, have them respond to **Discuss It** with a partner. Listen for understanding that:
- the distance between the center point and the other end of the system is constant.
- the system rotates around the center, so the distance across the watered space is twice the length of the system.

**Common Misconception**
**Listen** for students who confuse the concept of the length of the system, which is 1,320 feet, with the width of the circle, which is twice the system’s length. As students share their strategies, ask them to describe how the system moves around a central point. Ask students to use a diagram to show the widest distance across the circle, which is 2 times 1,320 feet, or 2,640 feet.

**Select and Sequence Student Strategies**
**Select 1–2 samples** that represent the range of student thinking in your classroom. Here is one possible order for class discussion:
- sketch of the circular shape of the watered area
- (misconception) diagram that shows the pipe’s length as the full distance across the circular area rather than a half that distance
- labeled diagram of watered area on grid paper

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Facilitate Whole Class Discussion
Call on students to share selected strategies. As students share, remind the class to look at each speaker and try to understand the ideas being expressed.

Guide students to Compare and Connect the representations. Allow students individual time to consider all the strategies before beginning the discussion.

ASK: How do the solutions of [student name] and [student name] both show that the shape of the watered area is a circle?
LISTEN FOR: Both solutions show how the 1,320-foot length of the system rotates about a center point and that its far end traces a circle.

CONNECT IT

1. **Look Back:** Look for understanding that the distance of 1,320 feet represents the distance from the center of the circle to the edge of the circle and that the greatest distance across the circle is twice this value.

2. **Look Ahead:** 9 What is the shape of the space this system will water? What is the longest distance across the space? How do you know? A circle, 2,640 ft. Possible explanation: Half the distance across the circle is 1,320 ft, so the distance across the whole circle must be 2,640 ft.

3. **Look Ahead:** Hula's irrigation system waters the shape of a circle. Every point on the edge of a circle is the same distance from the center.
   - The radius of this system is 1,320 feet, so the diameter is 2,640 feet.
   - The radius of a circle is the distance from the edge to the center.
   - The diameter is twice the radius.
   - Suppose two different diameters are drawn on a circle. Explain how you can use these diameters to find the center of the circle.
   - Every diameter passes through the center of a circle. So, if you draw two different diameters, the place where they cross must be the center of the circle.
   - The distance around a circle is called the **circumference**. Trace the circumference of the circle. How is the circumference of a circle like the perimeter of a square?
   - See diagram. Both the circumference of a circle and the perimeter of a square are the distance around the shape.

4. **Reflect:** You can draw more than one radius on a circle. What might be true about all the radii? (All radii are the same length.)
   - Possible answer: All the radii start at the center of the circle and end at the circumference. They are all straight lines and all have the same length.

5. **Look Ahead:** Point out that any circle can be described by its center and its radius or diameter. Students should recognize that the radius is the distance from the center of the circle to any point on the edge and the diameter is the distance across the circle through the center, which is twice the radius.

Ask a volunteer to restate the definitions of center, radius, diameter, and circumference in their own words. Support student understanding by using the diagram.

CLOSE

**Reflect:** Look for understanding that all the radii of a circle have the same length.

**Common Misconception:** If students confuse the radius with other line segments across a circle, such as a diameter or a chord, then draw a diagram of a circle with an unlabeled radius, diameter, and chord (segment across the circle that is not through the center). Have students compare and contract the three segments and identify the radius.
Example: Discourse cards provide sentence starters and questions to help students initiate, deepen, and extend conversations with partners, small groups, or the whole class.

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
1. The materials address language features at the sentence dimension for all of the identified proficiency levels. Each student’s experience with the student support materials is organized for students to participate at a variety of English language proficiency levels throughout the materials including using academic language at the sentence level. Within the differentiation for English language learners there is leveled support that provides appropriate sentence frames for different proficiency levels. Students have an opportunity to engage in academic language using these sentence frames. For example, you will find frames that include academic language for students to use as follows, *One advantage of distributing first is _______. One advantage of dividing first is _______.* See below for an example.

2. The language features at the sentence dimension are appropriate for the identified proficiency levels. Ready Classroom Mathematics provides differentiation ideas and opportunities for different proficiency levels in both productive and receptive language, which provides access to the grade level content. Sentence frames are differentiated for varied proficiency levels as well as other supports.
3. The language features at the sentence dimension are addressed systematically throughout the materials at grade levels 6, 7, and 8. Every lesson has a differentiation piece that supports language and content providing access for English language learners at the sentence dimension.

Example: Grade 6, Lesson 4, Differentiation Suggestions
Example: Grade 7, Lesson 4, Differentiation Suggestions

Connect to Language

For English language learners, use the Differentiation chart to scaffold the language in each session. Use the Academic Vocabulary routine for academic terms before Session 1.

DIFFERENTIATION | ENGLISH LANGUAGE LEARNERS

Levels 1–3: Speaking/Listening
Help students interpret Connect It problem 2. Read the problem aloud and ask them to follow along. Help students create a Co-Constructed Word Bank. First, have students highlight and add any unfamiliar words. Help students clarify meanings using short phrases and sentences and relate the meanings to the graph. Then reread each part of the problem and suggest math terms students could use in their response, such as quantities, equivalent ratios, unit rate, constant of proportionality, and coefficient. Provide definitions and examples. Read problem 2d with students and have them review the constant of proportionality. Display the equation and label y term, x term, and coefficient. Ask: What part shows the constant of proportionality?

Levels 2–4: Speaking/Listening
Help students interpret Connect It problem 2. Read the problem aloud and ask them to follow along. Help students create a Co-Constructed Word Bank. First, have students highlight and add any unfamiliar words. Help students clarify meanings using simple sentences and examples. Then use Say It Another Way to help students rephrase each part of the problem. Help students add other math terms to the word bank, such as equivalent ratios, unit rate, constant of proportionality, and coefficient. Prompt students to provide definitions and examples. Have students read problem 2d and review the constant of proportionality. Help students name the parts of the equation before discussing their responses in pairs.

Levels 3–5: Speaking/Listening
Support students’ understanding of Connect It problem 2. Have students work in pairs to read the problem. Have partners use a Co-Constructed Word Bank to identify words that will be helpful in talking about the problem. Encourage partners to review the lesson vocabulary and discuss how they might use the words. Invite students to share the words they listed and create a class word bank. Suggest adding the following math terms if needed: plot, graph, equivalent ratios, unit rate, constant of proportionality, term, and coefficient. Prompt students to discuss meanings with peers. Have partners read and discuss problem 2d. Have partners share which part of the equation shows the constant of proportionality.

Example: Grade 8, Lesson 4, Differentiation Suggestions

Connect to Language

For English language learners, use the Differentiation chart to scaffold the language in each session. Use the Academic Language routine for academic terms before Session 1.

DIFFERENTIATION | ENGLISH LANGUAGE LEARNERS

Levels 1–3: Reading/Speaking
Help students interpret Model It problem 4. Display and define the terms vertices and ray, using visuals. Read the problem aloud, providing support for understanding if/then sentences in the bulleted statements. Display If A, then B and explain that this means that if A (the first part) is true, then B (the second part) is true. Clarify the meaning of at least. Use a Co-Constructed Word Bank to list relevant terms. Ask students to underline the words if and then in each bulleted statement. Explain that in if/then statements when the first part of the sentence is true, the second part is also true. Ask students to turn and talk to a partner about what else they know to be true. Have partners use the Co-Constructed Word Bank to list unfamiliar words. Clarify meanings as needed.

Levels 2–4: Reading/Speaking
Help students interpret Model It problem 4. Read the problem with students. Use a Co-Constructed Word Bank to identify and clarify unfamiliar terms. Confirm understanding of vertices, ray, each pair of, and at least. Ask students to underline the words if and then in each bulleted statement. Explain that in if/then statements when the first part of the sentence is true, the second part is also true. Ask students to turn and talk to a partner about what else they know to be true. Have partners tell if each figure is a dilation of the other. Ask them to complete part b. Have them tell which bullet point best describes the figures.

Levels 3–5: Reading/Speaking
Help students interpret Model It problem 4. Have them work in pairs and use a Co-Constructed Word Bank to list unfamiliar words. Clarify meanings as needed.

Confirm understanding of if/then statements by asking partners to read the first bulleted statement. Ask: If you know the first part of the sentence is true, what else do you know? Have partners discuss and paraphrase the bulleted statements using terms from the word bank when appropriate. Then have them complete part b.
C. Word/Phrase Dimension (multiple meanings of words, general, specific, and technical language)

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 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 materials address language features at the word/phrase dimension in a consistent manner for all identified proficiency levels. There are a variety of opportunities for students to work with vocabulary throughout the instructional materials. Ready Classroom Mathematics helps students communicate ideas using both academic and math-specific vocabulary and language. As students prepare for a new unit and/or lesson students have the opportunity to receive explicit instruction in vocabulary through Academic Vocabulary Routines, Cognate Supports, a Prepare Stage that has students study terms and define the term, and activate prior background knowledge about the term, and also asks students to show examples and non-examples.

---

1 General language refers to words or expressions not typically associated with a specific content areas (e.g., describe a book).

2 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.
2. Words, expressions, and phrases are represented in context. At the beginning of each lesson there is an opportunity to pre-teach words, expressions, and phrases. These words, expressions and phrases are found in the context of the materials. See this example of vocabulary for Grade 7, lesson 4 at the beginning of the lesson.
Vocabulary

Math Vocabulary
There is no new vocabulary. Review the following key terms.

constant of proportionality the unit rate in a proportional relationship.

ordered pair a pair of numbers, \((x, y)\), that describes the location of a point in the coordinate plane. The \(x\)-coordinate gives the point’s horizontal distance from the \(y\)-axis, and the \(y\)-coordinate gives the point’s vertical distance from the \(x\)-axis.

origin the point \((0, 0)\) on the coordinate plane where the \(x\)-axis and \(y\)-axis intersect.

proportional relationship the relationship between two quantities where one quantity is a constant multiple of the other quantity. If the quantities \(x\) and \(y\) are in a proportional relationship, you can represent that relationship with the equation \(y = kx\), where the value of \(k\) is constant (unchanging).

\(x\)-coordinate the first number in an ordered pair. It tells the point’s horizontal distance from the \(y\)-axis.

\(y\)-coordinate the second number in an ordered pair. It tells the point’s vertical distance from the \(x\)-axis.

Academic Vocabulary

classify to know and say what something or someone is.

illustrate to be proof or evidence of something.
Then notice an example of the vocabulary, *proportional relationship* being used in context on student book, page 61 below.

3. General, specific, and technical language is appropriate for the targeted proficiency levels. Ready Classroom Mathematics provides differentiated supports that support
language at the word/phrase dimension. Suggestions to support this differentiation includes but is not limited to; Co-constructed Word Banks, Say It Another Way, Act It Out, and Three Reads. See the differentiated examples below.

Example: Co-constructed word banks

<table>
<thead>
<tr>
<th>Levels 1–3: Listening/Speaking</th>
<th>Levels 2–4: Listening/Speaking</th>
<th>Levels 3–5: Listening/Speaking</th>
</tr>
</thead>
</table>
| Help students make sense of Connect It problem 2. Rephrase the problem. Look at the lines for Company A and Company B. How are the lines the same? How are they different? Help students discuss the Try It graph. Create a Co-constructed Word Bank to describe the graph, adding words and phrases to describe the shapes of the graphs. Make sure students include and comprehend straight and origin. Guide students to use these sentence frames and the word bank to compare the lines:  
  * They are both ____.  
  * The line for Company ____ starts at the ____.  
  * The line for Company ____ does not start at the _____. | Help students interpret Connect It problem 2. Read aloud the problem and begin a Co-constructed Word Bank with alike and different. Have students add other words and phrases they can use to tell if things are alike or different, such as compare, contrast, both, and, but, and the same. Use Say It Another Way to help students tell what they need to do.  
  Have students turn and talk about the Try It graph. Invite students to expand the word bank to include descriptions of the graph, such as straight lines, origin, and y-axis.  
  Have partners use the word bank to compare the lines. Call on students to share their ideas. Prompt students to use comparison words in their responses. | Help students interpret Connect It problem 2. Have students read the problem. Point out comparison words alike and different and have partners discuss what each one means. Then use Say It Another Way to help students confirm understanding of the question.  
  Have students create a Co-constructed Word Bank with words and phrases they can use to talk about the lines. Help students brainstorm comparison words they can add. Point out or suggest conjunctions (e.g., and, but, or, etc.) and determiners (e.g., both, one, the other). Then have partners turn and talk to compare and contrast the lines. Call on students to share their ideas. Ask students to reword statements using comparison words. |

Example: Say It Another Way

<table>
<thead>
<tr>
<th>Levels 1–3: Reading/Speaking</th>
<th>Levels 2–4: Reading/Speaking</th>
<th>Levels 3–5: Reading/Speaking</th>
</tr>
</thead>
</table>
| Help students make sense of Connect It problem 1. Read the problem and ask students to underline total amount and amount of each ingredient. Display quantity and clarify that it has nearly the same meaning as amount. Continue reading and have students highlight quantities. Ask students to tell partners the quantity in each description that is the total amount and the amount of one ingredient.  
  Rephrase problem 2d: The two constants of proportionality are different. Why? Have partners identify the constants of proportionality in problems 2b and 2c and turn and talk about whether each relationship is in terms of a total amount or an amount of one ingredient. | Guide students to make sense of Connect It problem 2. Use Say It Another Way to help confirm students’ understanding. Ensure they understand the meaning of relationship between.  
  Continue reading and have students underline phrases that describe the relationship between amounts, such as for every and in terms of. Provide think time for students to analyze how these phrases are used in the sentences. Then ask partners to discuss the relationships.  
  Read problem 2e. Have partners turn and talk about the constants of proportionality and the order of the quantities and the relationships. Encourage student to use for every or in terms of in their discussions. | Support students as they analyze how descriptions express relationships, paying close attention to the nuances of prepositions in Connect It problem 2. Ask students to circle between, or, and from and explain the usages. Direct students to read each part of the problem. Have students use Say It Another Way to confirm understanding. Display the following phrases and have students discuss how each is used:  
  * the relationship between ____ and ____  
  * the relationship in terms of ____  
  After students respond in writing, have them meet with a partner to read each other’s responses and discuss the prepositions they used. |

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Example: Act It Out

Levels 1–3: Listening/Speaking
Help students make sense of Try It by explaining the photograph of the center pivot irrigation system. Then display the photograph from Connect to Culture and help students list words to describe it. Tell students that irrigation systems, like the one shown, create these green circles.
Read aloud Try It and use Act It Out to support understanding of the phrase turn around a center point. Adapt Say It Another Way by asking questions and guiding students to respond. (e.g., What does Mal order, or buy?) Have students respond with words, phrases, gestures, and/or drawings. If students’ ideas are unclear, reward so others can understand.

Levels 2–4: Listening/Speaking
Help students make sense of Try It by discussing the photograph of the center pivot irrigation system and reading the caption. Then display the photograph from Connect to Culture and have partners turn and talk about how the green circles were created.
Read aloud Try It and invite volunteers to use Act It Out to support the second sentence. Adapt Say It Another Way by reading each sentence of the problem and providing students with time to consider how to paraphrase that sentence. Ask for volunteers to paraphrase the text. Reward any unclear statements, or ask another student to do so, so that others understand. Confirm with the speaker that the rewording is correct.

Levels 3–5: Listening/Speaking
Help students make sense of Try It. Have students turn and talk about how the word problem connects to their discussion from Connect to Culture and the photograph of the center pivot system. Have students ask for clarification of terms. Invite them to offer additional prior knowledge related to farming or irrigation by asking: How might a farmer or gardener bring water when there is not enough rain?
Use Say It Another Way to have students paraphrase each sentence of the problem. Remind students to be respectful if they disagree with another’s ideas. Select students who showed thumbs down and have them explain what is inaccurate or missing in the paraphrase.

Example: Three Reads

Levels 1–3: Reading/Speaking
Guide students as they interpret and discuss Connect It problem 5. Display and discuss the academic terms approximate and exact. Support understanding by asking students to estimate and count things in the classroom. Provide these frames to help students talk about problem:
- The formula for the circumference of a circle is ___.
- An approximate value of \( \pi \) is ___.
- The exact circumference is ___.
- The approximate circumference is ___.

Levels 2–4: Reading/Speaking
Adapt Three Reads to support students as they interpret and discuss Connect It problem 5. First review the definitions for exact and approximate. After the first read, have students turn and talk about the difference between an exact circumference and an approximate circumference. Have partners work together to complete the second and third read and answer the corresponding questions. Have them sketch and label the circle described and use the the model to restate the problem.

Levels 3–5: Reading/Speaking
Use Three Reads to support students as they make sense of Connect It problem 5. Adapt the routine by asking students to preview the problem to identify unfamiliar vocabulary. Clarify the terms as needed. Before each reading, display the question students will answer. After the read, provide students with individual think time to consider their responses. Have students compare their responses with partners. Call on several students to share their ideas. To prompt students to use precise language, call on volunteers to reward vague or unclear statements.
You will also notice that there are examples of specific and technical language within the vocabulary section in each lesson overview. This example shows specific language which is the academic vocabulary that may cut across content areas and the technical language which is the math vocabulary. Students interact with this vocabulary throughout the lesson as well as general vocabulary.

### Vocabulary

**Math Vocabulary**

*exterior angle* when you extend one side of a polygon, the angle between the extended side and the adjacent side. This angle forms a linear pair with the adjacent interior angle of the polygon.

Review the following key terms.

*linear pair* two angles that are adjacent and supplementary.

*similar triangles* triangles that are scale drawings of one another. Similar triangles have the same shape but may have a different size.

**Academic Vocabulary**

*nonadjacent* not touching or being next to. Nonadjacent angles do not share a vertex or side.

*related* to connect one thing with one or more other things.

4. General, specific, and technical language is systematically presented throughout the materials in Ready Classroom Mathematics. At the beginning of each lesson in grade levels 6, 7, and 8 specific and technical vocabulary is highlighted. General vocabulary shows up throughout the lessons. Each lesson in all grade levels also provides ideas for differentiation as it relates to language. The support for vocabulary development also exists in all lessons in grades 6, 7, and 8 which supports students with general, specific and technical language. See the examples below from Grade 6, Lesson 11.
Vocabulary

Math Vocabulary
There is no new vocabulary. Review the following key terms.

**base (of a three-dimensional figure)** a face of a three-dimensional figure from which the height is measured.

**cube** a rectangular prism in which each face of the prism is a square.

**right rectangular prism** a right prism where the bases and other faces are all rectangles.

**volume** the amount of space inside a solid figure. Volume is measured in cubic units such as cubic inches.

Academic Vocabulary

**approach** to begin to think about.

**diagram** a drawing that explains or shows the parts of something.

**maximum** the greatest amount that is possible or allowed, or the greatest value in a group.
Connect to Language

For English language learners, use the Differentiation chart to scaffold the language in each session. Use the Academic Vocabulary routine for academic terms before Session 1.

DIFFERENTIATION | ENGLISH LANGUAGE LEARNERS

Levels 1–3: Writing/Speaking
Use Co-Constructed Word Bank to prepare students to talk and write about Connect It problem 2. Review lesson vocabulary and point out other math terms students may need as they work on the problem, such as edge, large, small, layer, and make up. Encourage students to suggest other words and phrases they want to include. Have students turn and talk in pairs to identify the length, width, and height of the large cube. Provide frames to help them describe the dimensions in terms of the small cubes:

- The length is ___ small cubes.
- The ___ is ___ small cubes.
- Refer them to the word bank as they complete the frames.

Levels 2–4: Writing/Speaking
Use Co-Constructed Word Bank to prepare students to talk and write about Connect It problem 2. Guide students to add relevant terms they can use as they work on the problem. Adapt Stronger and Clearer Each Time by providing sentence frames for students to complete and then working to clarify and revise ideas through partner discussion.

- The edge length is ___ because ___.
- The volume is ___ because ___.
- I know that ___ because ___.
- The volume of a small cube is ___.
- My answer using the formula is the same as/ different from ___.

Levels 3–5: Writing/Speaking
Have pairs discuss Connect It problem 2 before drafting answers individually. Ask one person in each pair to point to the small cube and tell how to find its volume. Then ask the other partner to point to the large cube and tell how to find its volume.

Have students draft their answers individually. Use a brief two-person version of Stronger and Clearer Each Time to allow partners to help revise each other’s answers so that they make sense.

Remind students to use precise math and academic vocabulary in their written responses. Identify student responses that can be used as models of precise language to present to the class.

LESSON 11 Solve Volume Problems with Fractions 229–230

Support Vocabulary Development
Assign Prepare for Solving Volume Problems with Fractions as extra practice in class or as homework.

If you have students complete it in class, use the glossary below:

Ask students to consider the terms volume. Provide support as needed, helping students see either a visual or a written formula to guide their thinking.

Have students work individually to complete the graphic organizer. Invite students to share their completed organizers, and prompt a whole-class comparison of the words, illustrations, and example given.

Have students look at the pictures in problem 2 and discuss with a partner how the volume of the prism can be computed. Have students discuss the terms characteristics and explain why this information is needed to solve the problem.

Problem Notes
1. Students should understand that volume is the amount of space inside a three-dimensional figure. Students may respond that the formula for finding the volume of a rectangular prism is \( V = \text{length} \times \text{width} \times \text{height} \). Students should recognize that \( \text{length} \) = one of the base, \( \text{width} \) = one of the base, and \( \text{height} \) = width. Students should also recognize that volume is measured in cubic units.

2. Students should recognize that the volume of a prism is greater than the volume of its net. A rectangular prism made up of four rectangular prisms can be made up of more rectangular cubes.

REAL-WORLD CONNECTION

To prevent bacteria from growing in pools, chlorine must be added to the water. To determine the correct amount of chlorine, the volume of the water in the pool must be known. In a rectangular pool, the volume can be calculated with the formula for the volume of a rectangular prism. Some Olympic pools are 45 feet long, 28 feet wide, and 5 feet deep. The volume of water needed to fill this pool is \( 45 \times 28 \times 5 = 6600 \text{ ft}^3 \). To get an idea of how much water that is, think about how many gallons of water would be needed to fill the pool. There are about 202 gallons in one cubic foot. That means almost \( 6600 \times 202 = 1352400 \) gallons of water are needed to fill the pool. Ask students to think of other real-world problems when finding volumes of rectangular prisms might be useful.
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
1. The materials differentiate between the proficiency levels in the Ready Classroom Mathematic materials. Each English language proficiency level is outlined in the differentiation chart at each of the grade levels in each lesson. This differentiation is broken down into three parts that suggest different ideas for levels 1-3, 2-4 and 3-5.

2. The differentiation of language proficiency is developmentally and linguistically appropriate for the designated language levels within the 6, 7, and 8 grade materials in the Ready Classroom Mathematics. There is a chart in each Teacher’s Guide that shows examples of what English learners at different levels of English language proficiency can do in connection with the grade level learning goals as they are addressed in the units. As a teacher plans for a unit, these examples of language expectations will help differentiate instruction to meet the needs of English learners.
3. Differentiation of language is systematically addressed throughout the Ready Classroom Mathematics in grade levels 6, 7 and 8 for each unit. Suggestions are made of what English learners can do at different proficiency levels in connection with the grade level standards as they are addressed in the units. As a teacher plans for a unit, these examples of language expectations will help differentiate instruction to meet the needs of English learners. See the example below from grade level 6 for units 1, 2, and 3.
**Language Expectations**

The chart below shows examples of what English learners at different levels of English language proficiency can do in connection with one of the learning targets addressed in this unit. As you plan for this unit, use these examples of language expectations to help you differentiate instruction to meet the needs of English learners.

**Learning Target:** Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole-number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations).

<table>
<thead>
<tr>
<th>LANGUAGE DOMAINS</th>
<th>BEGINNING Level 1</th>
<th>INTERMEDIATE Level 2</th>
<th>INTERMEDIATE Level 3</th>
<th>ADVANCED/ADVANCED HIGH Level 4</th>
<th>ADVANCED/ADVANCED HIGH Level 5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>LISTENING</strong></td>
<td>Listens to a series of one-step instructions and identifies the corresponding steps for evaluating an expression using a model with teacher support as needed.</td>
<td>Matches an oral sequence of steps for evaluating an expression to the corresponding steps in a model working with a partner.</td>
<td>Carries out oral directions to evaluate an expression by listening to the directions multiple times and working with a partner.</td>
<td>Carries out oral directions to evaluate an expression by working with a partner and asking questions for clarification as needed.</td>
<td>Carries out oral directions to evaluate an expression, asking for clarification or additional information as needed.</td>
</tr>
<tr>
<td><strong>SPEAKING</strong></td>
<td>Explains how the value of a variable affects the value of an expression by working with the teacher to complete sentence frames using lesson vocabulary.</td>
<td>Explains how the value of a variable affects the value of an expression by using lesson vocabulary to complete sentence frames.</td>
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</tr>
<tr>
<td><strong>READING</strong></td>
<td>Chooses answers to multiple-choice questions by defining key terms with an illustrated glossary and by identifying variables, values, and operations with a partner.</td>
<td>Interprets real-world problems that involve evaluating expressions by defining key terms using the Interactive Glossary or a bilingual dictionary and by identifying variables, values, and operations with a partner.</td>
<td>Interprets real-world problems that involve evaluating expressions by using the glossary or a dictionary to clarify word meanings as needed and by identifying variables, values, and operations with a partner.</td>
<td>Interprets real-world problems that involve evaluating expressions by identifying the variables, values, and operations with a partner.</td>
<td>Interprets real-world problems that involve evaluating expressions by identifying the variables, values, and operations with a partner.</td>
</tr>
<tr>
<td><strong>WRITING</strong></td>
<td>Records the order of steps to evaluate an expression by using models, variables, numbers, and symbols.</td>
<td>Records the order of steps to evaluate an expression by using models, variables, numbers, and symbols.</td>
<td>Records the order of steps to evaluate an expression by using models and a list of sequence words.</td>
<td>Records the order of steps to evaluate an expression by using models and a list of sequence words.</td>
<td>Records the order of steps to evaluate an expression by using models and a list of sequence words.</td>
</tr>
</tbody>
</table>
### Language Expectations

The chart below shows examples of what English learners at different levels of English language proficiency can do in connection with one of the learning targets addressed in this unit. As you plan for this unit, use these examples of language expectations to help you differentiate instruction to meet the needs of English learners.

**Learning Target:** Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem.

<table>
<thead>
<tr>
<th>LANGUAGE DOMAINS</th>
<th>BEGINNING</th>
<th>INTERMEDIATE</th>
<th>ADVANCED/ADVANCED HIGH</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>LISTENING</strong></td>
<td>Level 1</td>
<td>Level 2</td>
<td>Level 3</td>
</tr>
<tr>
<td></td>
<td>Match oral descriptions of quotients of fractions to their visual and numerical representations using bar models, number lines, and equations.</td>
<td>Match oral descriptions of quotients of fractions to their visual and numerical representations using bar models, number lines, and equations.</td>
<td>Category numbers as dividends, divisors, or quotients, based on verbal descriptions of quotients of fractions using bar models, number lines, and equations.</td>
</tr>
<tr>
<td></td>
<td>Identify a strategy to find the quotient of fractions using a model or diagram, and then explain the strategy in a group discussion.</td>
<td>Describe a strategy to find the quotient of fractions using a model or diagram, and then explain the strategy in a group discussion.</td>
<td>Justify a strategy to find the quotient of fractions using a model or diagram, and then explain the strategy in a group discussion.</td>
</tr>
<tr>
<td><strong>READING</strong></td>
<td>With partners, locate important quantities in word problems and demonstrate understanding of their relationships using a bar model and an equation.</td>
<td>Demonstrate understanding of word problems involving fractions by paraphrasing the problem with a partner and drawing a picture to explain the relationships among important quantities with bar models or equations.</td>
<td>Demonstrate understanding of word problems by working with partners to use a bar model and an equation to represent the problem.</td>
</tr>
<tr>
<td><strong>WRITING</strong></td>
<td>Compare strategies for finding a quotient of fractions by using models to show different strategies and then labeling the similarities and differences.</td>
<td>Compare strategies for finding a quotient of fractions by using models to show different strategies and then labeling the similarities and differences.</td>
<td>Compare strategies for finding a quotient of fractions by using models to show different strategies and then explaining how the models are the same and different.</td>
</tr>
</tbody>
</table>

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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. The language domains (listening, speaking, reading, and writing) are targeted in the Ready Classroom Mathematics materials. Many opportunities for both receptive and productive language opportunities are present throughout grade levels 6, 7, and 8.

2. The targeted language domains are presented within the context of language proficiency levels. In the differentiation chart there are supports that address all language domains. All units provide opportunities for use of all domains throughout lessons.

3. The targeted language domains are systematically integrated throughout the materials. Each unit throughout Ready Classroom Mathematics has a Language Expectation Chart that shows examples of what English learners at different levels of English language proficiency can do in each of the four language domains; listening, speaking,
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

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 Classroom Mathematics materials connect the language development standards to the state academic content standards. Ready Classroom Mathematics lessons reflect the same focus as the major work of the learning goals. The materials build on prior knowledge, making connections within and across all domains, grade levels, and content areas.

2. The academic content standards are systematically represented throughout the materials in Ready Classroom Mathematics in grade levels 6, 7, and 8. Lessons build upon one another and provide a learning progression chart for each lesson per unit. See example below from the 7th grade materials in lesson 26.
LESSON 26  
Overview | Solve Problems Involving Volume

STANDARDS FOR MATHEMATICAL PRACTICE (SMP)
SMP 1, 2, 3, 4, 5, and 6 are integrated into the Try-Discuss-Connect routine.

This lesson provides additional support for:
4. Model with mathematics.
7. Look for and make use of structure.

**The page helps to learn how many lesson in this case.**

Objectives

Content Objectives
- Generalize that $V = \text{base} \times \text{height}$ for any prism and use this formula to solve problems.
- Solve problems involving finding the volume of right prisms.
- Solve real-world and mathematical problems by finding measurements of right prisms.
- Solve real-world and mathematical problems involving volumes of composite three-dimensional objects made up of right prisms.

Language Objectives
- Justify solutions to problems involving volume of prisms using words and the formula $V = \text{base} \times \text{height}$ in speaking and writing.
- Read and interpret multi-step word problems by identifying quantities and the relationships among them.
- Understand the lesson vocabulary and use it to discuss word problems involving finding measurements of right prisms.
- Make connections among strategies in class discussion by telling how each can be used to find the volume of a composite three-dimensional object.

Prior Knowledge
- Recognize right prisms and identify their bases.
- Apply the formulas $V = \text{base} \times \text{height}$ and $V = \text{base} \times \text{height}$ for volume of right prisms.
- Find areas of composite shapes.
- Find surface area as the sum of the areas of the faces of a three-dimensional figure.

Vocabulary

Math Vocabulary
- base (of a three-dimensional figure): a face of a three-dimensional figure from which the height is measured.
- right prism: a prism where each base is perpendicular to the other faces. In a right prism, the faces that are not bases are rectangles.
- volume: the amount of space inside a solid figure. Volume is measured in cubic units such as cubic inches.

Academic Vocabulary
- strategy: a careful way or plan for getting something done.

Learning Progression

In Grade 6, students recognized concepts of volume measurement, such as filling a shape with unit cubes. They determined the volumes of right rectangular prisms and derived formulas for the volume.

Earlier in Grade 7, students found the surface areas of various prisms and solved real-world and mathematical problems involving surface area of composite figures.

In this lesson, students extend their understanding of surface area and volume to composite three-dimensional figures. They will use the formula $V = \text{base} \times \text{height}$ to find the volume of right prisms with bases that are not rectangles. They also will apply the formula to find missing side lengths when the volume and other measurements of a prism are known.

Later in Grade 7, students will identify and compare plane sections of prisms.

In Grade 8, they will solve surface area and volume problems involving other three-dimensional shapes such as cones, cylinders, and spheres.
3. Social and instructional language and one or more of the remaining WIDA Standards are present in the materials. Ready Classroom Mathematics has coherence with content areas. In the Real-World Connections portion of the materials it draws attention to how mathematics is related to the real world, for example how it may have a focus on Science, Technology, Engineering, Art, and Mathematics (STEAM). There are many opportunities to interact with social language as well as the language of science, English language arts, social studies as well as the extended strands to include the language of art, music, and physical education.
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. The Ready Classroom Mathematics 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. Every lesson in the 6th, 7th, and 8th grade materials provides a lesson overview which includes language objectives that ask students to engage in various cognitive functions. There are many opportunities throughout the lessons for students to use language to compare, describe, interpret, justify, apply, etc.
2. Higher order thinking is systematically addressed in the Ready Classroom Mathematics materials. As stated above, every lesson in the 6th, 7th, and 8th grade materials provides a lesson overview which includes language objectives that ask students to engage in various cognitive functions. There are many opportunities throughout the lessons for students to use language to compare, describe, interpret, justify, apply, etc. See the examples below.

**Language Objectives**

- Use lesson vocabulary and comparative adjectives, such as faster, steepest, least, greater, greatest, smallest to analyze, describe, and compare linear functions.
- Interpret, explain, or classify statements about linear functions using true, always, never, and sometimes.
- Compare strategies with a partner and explain the connection between two strategies.

**Language Objectives**

- Discuss connections between visual models and equations in word problems involving fraction division with a partner.
- Read and interpret word problems to determine which quantity is the dividend and which quantity is the divisor.
- Justify the size of the quotient in relationship to the dividend and divisor using reasoning and understanding of fraction division in class discussion.
- Apply understanding of division with fractions to write a word problem to match a given expression using complete sentences.
- Understand and use lesson vocabulary to accurately explain division of fractions.
Example: Grade 6, Lesson 10, Students are asked to discuss, interpret, justify, apply, explain

**Language Objectives**

- Discuss connections between visual models and equations in word problems involving fraction division with a partner.
- Read and interpret word problems to determine which quantity is the dividend and which quantity is the divisor.
- Justify the size of the quotient in relationship to the dividend and divisor using reasoning and understanding of fraction division in class discussion.
- Apply understanding of division with fractions to write a word problem to match a given expression using complete sentences.
- Understand and use lesson vocabulary to accurately explain division of fractions.
Language Objectives

• Explain solution strategies to subtraction problems with negative numbers using lesson vocabulary and academic language.
• Explain how to rewrite and reorder to solve problems involving addition or subtraction of negative numbers during class discussions.
• Respond to clarifying questions about positive and negative numbers by accurately using the lesson vocabulary in speech and writing.

Example: Grade 8, Lesson 10, Students are asked to interpret, explain, describe, solve

Language Objectives

• Read and interpret problems in order to represent them with an equation with one variable.
• Explain steps for solving linear equations in one variable in speaking or writing.
• Understand lesson vocabulary and use it accurately to explain reasoning when solving linear equations with rational number coefficients.
• Build on strategies described by a partner by adding examples to explain why a selected strategy makes sense.
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 Classroom Mathematics materials provide scaffolding supports for students to advance within a proficiency level. Each lesson session provides a Connect to Language section for English language learners. The Differentiation chart is used to scaffold the language in each session. As you see in the example below the Differentiation chart addresses proficiency levels 1-3, 2-4, and 3-5 within proficiency level bands.

2. As stated above the materials provide scaffolding supports for students to progress from one proficiency level to the next. If teachers use the Differentiation chart for English language learners, students will have an opportunity to advance from one proficiency level to the next in the domains of language that are addressed through the language differentiation.
3. Scaffolding supports are presented systematically throughout the materials in the Ready Classroom Mathematics in grade levels 6, 7 and 8. Each unit lesson session provides a Differentiation chart for English language learners. Using this chart throughout each session will support the growth in proficiency levels for English learners. See the examples below from the 6th grade materials and notice the progression of the differentiation throughout each lesson session.

Example: Grade 6, Lesson 9, Session 1

**DIFFERENTIATION | ENGLISH LANGUAGE LEARNERS**

*Levels 1–3: Listening/Speaking*
Guide students to make sense of Model It problem 2 and share ideas in the first Discuss It. Read the problem aloud. Use gestures and rephrasing to help students understand the problem. Begin a Co-Constructed Word Bank of big ideas that might be included in discussion about the bar model, such as equal parts, parts, size, and fraction. Have small groups discuss the bar model using terms from the word bank. Call on volunteers to share ideas. Invite students to paraphrase the speaker’s ideas using the frame:
- I think you said ..., is that correct?
- Allow the speaker to respond to the paraphrase.

*Levels 2–4: Listening/Speaking*
Guide students to make sense of Model It problem 2 and prepare them to share ideas in the first Discuss It. Adapt Notice and Wonder by providing sentence starters to help students verbalize ideas about the bar model in problem 2:
- I notice that …
- I wonder …
Reword as needed and record student responses. If necessary, guide them to interpret the quotient of 4 as 4 equal groups, each with 3 parts of size \( \frac{1}{4} \). During Discuss It, have students confirm understanding by paraphrasing their partner’s ideas.

*Levels 3–5: Listening/Speaking*
Prepare students to share ideas about Model It problem 2 in Discuss It. Use Notice and Wonder to provoke thought about the bar model in problem 2. Have students turn and talk with a partner before calling on volunteers to share what they noticed or wondered. Encourage partners to adapt Co-Constructed Word Bank by creating a bank of terms that they can use in Discuss It. Remind students to listen to understand their partner’s message during Discuss It by using engaged body language and asking clarifying questions.

Example: Grade 6, Lesson 9, Session 2

**DIFFERENTIATION | ENGLISH LANGUAGE LEARNERS**

*Levels 1–3: Speaking/Writing*
Prepare students to respond in writing to Connect It problem 4 by facilitating partner discussion before writing. Prompt partners to explain the parts of the number line in problem 3, including the tick marks and labels. Support them as they draw and describe a bar model. Ask: When you draw a model of \( \frac{5}{6} \), how many equal-size parts do you make? Have partners display the models and use sticky notes to record at least one similarity and one difference. Provide sentence frames to help students organize their writing:
- The number line and the bar model ... .
- The bar model ..., but the number line ... .

*Levels 2–4: Speaking/Writing*
Prepare students to respond in writing to Connect It problem 4. Pose the following questions for partners to discuss, and then call on volunteers to share ideas: How does the number line in problem 3 represent the quotient? How can a quotient be shown in a bar model? Allow time for students to draw their bar models individually.
Have partners display the models and discuss similarities and differences. Then have them draw a Venn diagram to compare. Support writing with sentence frames:
- Both models ... .
- One model ..., but the other ... .

*Levels 3–5: Speaking/Writing*
Prepare students to respond in writing to Connect It problem 4. Have students turn and talk to a partner to review and describe the number line in problem 3. Ask them to compare a bar model and a number line. Encourage them to tell which parts and labels will be the same and which ones will be different. Then have them draw and describe a bar model.
Have partners display the models, side by side, and discuss similarities and differences. Then have them draw a Venn diagram to compare. Have partners refer to their diagrams as they write comparisons. Encourage them to use comparison words and phrases such as similar, different, both, however, and in contrast.
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 grade-level content present in the Ready Classroom Mathematics materials is linguistically and developmentally appropriate for grade levels 6, 7 and 8. The materials align to the grade level standards and linguistic supports are provided in order for students to be able to access them. These supports are integrated through language and mathematics and include language routines as well as scaffolded language supports. The suggestions for scaffolding and amplifying the language can be applied to many contexts within the materials.
2. Grade-level content is accessible for the targeted levels of language proficiency. Linguistic supports are provided in order for students to be able to access content. These supports are integrated through language and mathematics and include language routines as well as scaffolded language supports. The suggestions for scaffolding and amplifying the language can be applied to many contexts within the materials.

Program Overview

Integrate Language and Mathematics

To help students use academic language to learn, the Try-Discuss-Connect routine includes language routines to make sense of problems, teacher moves to guide discussion and mathematical understanding, and student conversation tips for engaging in mathematical discourse.

- **Language Routines**: To make sure students understand the problem, use a language routine like 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 effective teaching strategies like Turn and Talk and Individual Think Time to develop mathematical understanding and guide discussion.

- **Try**: Identify and define the problem.
- **Discuss**: Compare and connect strategies. Share and display solutions.
- **Connect**: Draw connections between concepts and operations.
Differentiated Instruction for English Learners

Every session includes differentiated support for various levels of English proficiency.

Levels 1–3: Reading/Listening

Use Three Reads to help students interpret the problem. After the first read, have students state the number of points earned for a touchdown and a field goal. Then have volunteers use Act It Out with one person tossing a coin 7 times while the other students record points and the final score. Ask: What is the system of equations? What do the variables represent? Have students solve the problem.

Levels 2–4: Reading/Listening

Use Three Reads to help students interpret the problem. After the first read, have students talk about the difference between scoring multiple times and earning points. Point to the score board and ask: What does the number on the scoreboard represent? Have students share what they know about scoring points in sports. After the second read, have students use a coin toss to Act It Out to show the way teams earn points in a football game. Ask: What is the system of equations? What do the variables represent? Have students solve the problem.

Levels 3–5: Reading/Listening

Use Three Reads to help students interpret the problem. After the first read, have partners discuss the quantities and relationships in the problem. Display these questions to support discussion:

- What do the variables represent?
- What information is in each equation?

Work with students that need explanations use complete sentences and precise vocabulary.

Scaffolded language support for a specific problem is outlined. These suggestions for scaffolding and amplifying the language can be applied to other problems as well.
Program Overview

Support for Language, Discourse, Community, and Culture

Ready Classroom Mathematics recognizes the linguistic and cultural assets that all students, especially English Learners, bring to the classroom. Building on students’ background knowledge, experiences, and insights can enrich the classroom culture and help ensure engagement and academic success.

See a few program highlights below and a complete list in the chart to the right.

Vocabulary Development

Ready Classroom Mathematics helps students communicate ideas using both academic and math-specific vocabulary and language.

Connect to Culture

- Use these activities to connect with and leverage the diverse backgrounds and experiences of all students. Engage students in sharing what they know about contexts before you add the information given here.

SESSION 1

Try It
A yard sale, or garage sale, is a sale of used household goods or personal items, typically held in a person’s property. The word yard sale is derived from “yard stick”, a tool used to measure yards. Sales such as these are common in many communities across the country.

Explore Session: Prepare for ...

(Cognate Support)

SESSION 2

Try It
Ask students to plan their gardens and design a garden on the roof of a building. Encourage them to design their gardens and help them to include plants that are native to the city and can produce fresh food. These gardens also offer significant environmental benefits. Students can build a model to simulate their garden and help to illustrate its seasonal growth, helping to increase energy use. They can also create a checklist for their garden, and help to suggest other possible benefits of rooftop gardens that they can add to the list.

Connect to Culture

Provides background information and cultural connections to help build on all students’ experiences and to enhance learning.

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## Language and Discourse

<table>
<thead>
<tr>
<th>Feature</th>
<th>How This Supports Language and Discourse</th>
<th>Where to Find It</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language Objectives</td>
<td>Language Objectives indicate the language students are expected to understand and produce as they work on Lesson Objectives.</td>
<td><em>Teacher's Guide</em></td>
</tr>
<tr>
<td><strong>Unit: Prepare for ...</strong></td>
<td>Prepare for pages provide opportunities to activate prior knowledge while thinking about familiar math concepts that are important in the unit. These pages also begin a focus on general, all-purpose academic words and phrases.</td>
<td><em>Student Worktext</em></td>
</tr>
<tr>
<td><strong>Explore Session: Prepare for ...</strong></td>
<td>Prepare for pages use graphic organizers to help students access prior knowledge and vocabulary they will build on in the lesson.</td>
<td><em>Teacher's Guide</em></td>
</tr>
<tr>
<td><strong>Try-Discuss-Connect Routine</strong></td>
<td>In Discuss, 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.</td>
<td><em>Student Worktext</em></td>
</tr>
<tr>
<td><strong>Develop Academic Language</strong></td>
<td>Develop Academic Language supports students in understanding and using academic language words and sentences and in engaging in productive mathematical discourse.</td>
<td><em>Teacher's Guide</em></td>
</tr>
<tr>
<td><strong>Discourse Cards</strong></td>
<td>Discourse Cards provide sentence starters and questions to help students initiate, deepen, and extend conversations with partners, small groups, or the whole class.</td>
<td><em>Teacher Digital Experience &gt; Ready Classroom Mathematics Teacher Toolbox</em></td>
</tr>
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## English Learner Support

<table>
<thead>
<tr>
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<th>Where to Find It</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language Expectations</td>
<td>Language Expectations charts describe the language English Learners can understand and produce in connection with a learning target with support that is differentiated based on students’ levels of English proficiency. Teachers can use these examples to help meet the needs of English Learners.</td>
<td><em>Teacher's Guide</em></td>
</tr>
<tr>
<td><strong>Unit: Prepare for ... (Cognate Support)</strong></td>
<td>A Cognate Support routine is provided in the Teacher’s Guide for students who primarily speak Spanish or other Latin-based languages.</td>
<td><em>Student Worktext</em></td>
</tr>
<tr>
<td><strong>Differentiation: English Language Learners</strong></td>
<td>Differentiation: English Language 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.</td>
<td><em>Teacher's Guide</em></td>
</tr>
</tbody>
</table>

## Community and Culture

<table>
<thead>
<tr>
<th>Feature</th>
<th>How This Supports Community and Culture</th>
<th>Where to Find It</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Connect to Culture</strong></td>
<td>Connect to Culture provides teachers with ideas to increase engagement and encourage connections among students from a wide variety of backgrounds and experiences.</td>
<td><em>Teacher's Guide</em></td>
</tr>
<tr>
<td><strong>Family Letters</strong></td>
<td>Family Letters provide background information and include an activity. Letters are available for every lesson in English, Spanish, and Tagalog.</td>
<td><em>Student Worktext</em></td>
</tr>
<tr>
<td><strong>Math in Action</strong></td>
<td>Math in Action lessons include explanations of topics to build background and include contexts that connect with all students.</td>
<td><em>Student Worktext</em></td>
</tr>
</tbody>
</table>
3. The grade-level content is systematically presented throughout the Ready Classroom Mathematics materials. Each unit lesson brings students through a progression of learning. You can see an example of the systems below in the pacing guide and how lessons build upon one another.
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 Classroom Mathematics materials include a range of language functions which can be found in the language objectives for each lesson. Students are asked to use language to explain, describe, interpret, justify, apply, etc throughout the math content. The materials also have a Develop Academic Language feature that contains conversation tips based on six language functions, including listening, explaining, agreeing, and building on, disagreeing and justifying.
Example: Language Objectives including language functions describe and compare

**Language Objectives**
- Describe translations, reflections, and rotations using lesson vocabulary and the verbs *turn*, *slide*, and *flip*.
- Compare figures and images by reading and answering questions about length of line segments, the measures of angles, or parallel lines.
- Name the corresponding parts of a figure and image and use symbols to compare them.
- Describe the size, shape, orientation, and location of images using words and symbols.
- Listen to the ideas of others by looking at the speaker and asking clarifying questions about the corresponding sides of a figure and its image.

Example: Develop Academic Language Feature

**DEVELOP ACADEMIC LANGUAGE**

**WHY?** Understand questions by restating them as statements.

**HOW?** Tell students that one way to start to understand how and why questions is to restate all or part of them as statements. Demonstrate with Connect It problem 2: *Why does multiplying by 2 tell you how many \( \frac{1}{2} \) are in a number?* →

Multiplying by 2 tells you how many \( \frac{1}{2} \) are in a number. *Why?* Encourage students to restate questions they find confusing.

**DEVELOP ACADEMIC LANGUAGE**

**WHY?** Reinforce understanding of **based on** in math.

**HOW?** Have students discuss how they answer questions about probability. Guide students to understand that they need to use results from an experiment. *Say: The prediction or answer is based on results.* Read Connect It problem 3. Help students use the phrase to talk about the answers:

- **Erin** rolled a 3 ____ times. Based on this result, the probability of rolling a 3 is ____.
2. The language functions are incorporated into a communicative goal or activity in each of the lessons. You will notice that the materials focus on language and discourse and discussion is a large part of the learning. Students also have opportunities to write. Productive language is a focus within the Ready Classroom Mathematics materials in grades 6, 7, and 8. Also, oftentimes the language objectives are directly connected to the conversation tips in the Develop Academic Language feature. See this example below and how it incorporates productive language.

Example: Grade 7, Lesson 11

Students are asked to, **Explain** how to model multiplication with negative integers using opposite numbers and product and to, **Connect patterns with integers to equations involving multiplication during partner and class discussions**, and to, **Use the lesson vocabulary when justifying answers and explaining if a product is positive or negative**. These language adjectives are focused around a communicative goal.

**Language Objectives**
- Explain how to model multiplication with negative integers using opposite numbers and product.
- Connect patterns with integers to equations involving multiplication during partner and class discussions.
- Use the lesson vocabulary when justifying answers and explaining if a product is positive or negative.

3. The language functions support the progression of language development. Paying attention to the Differentiation Chart that is provided for each session on each lesson you will notice that the suggestions support the progression of language development.

For example, in **levels 1-3** it suggests to Read the problem with students and explain that the order of the factors is the sequence of the numbers being multiplied. Help students identify cognates, such as the Spanish cognates orden and secuencia. Guide students to list sequence words that describe order, like first, second, and next. Then have them point to the equations in problems 5a and 5b and tell the order of the factors using sequence words. Prepare students to write written responses by asking them to tell what they notice about the equations. Record statements that show how the equations are the same or different for students to refer to as they write.
For example, in **levels 2-4** it suggests to *Encourage students to describe and compare the equations using product and factor.* Call on students to share their ideas. *Ask others to repeat and rephrase the statements.* Record the ideas for students to refer to as they write. Have students read problem 5c and *discuss the meanings of order of the factors and change the product.* Ensure students understand that, in this context, order refers to the sequence. Have *partners discuss* their ideas before writing. Encourage them to *identify* any statements from the earlier discussion that they may use in their answer.

For example, in **levels 3-5** it suggests students to *discuss what they notice about the equations in problems 5a and 5b.* Encourage them to *use precise mathematical language, like product, factor, and integers.* Call on several students to *rephrase important ideas.* Emphasize statements that *compare the factors and products in the equations.* Have students read problem 5c and use *Say It Another Way* to confirm their understanding. Ask partners to *discuss how the question relates to the equations in problems 5a and 5b.* Remind students that they should *compare the order of the factors and the products of the two equations in their written responses.*

Within this example of language progression notice the highlighted words and how the linguistic complexity grows throughout the progression. You will notice the linguistic complexity grows as the language proficiency grows but the task remains similar, which keeps students working at their zones of proximal development.

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**DIFFERENTIATION | ENGLISH LANGUAGE LEARNERS**

**Levels 1–3: Reading/Writing**
Support understanding of Model It problem 5c. Read the problem with students and explain that *the order of the factors is the sequence of the numbers being multiplied.* Help students identify cognates, such as the Spanish cognates orden and secuencia. Guide students to list sequence words that describe order, like first, second, and next. Then have them point to the equations in problems 5a and 5b and tell the order of the factors using sequence words. Prepare students to write written responses by asking them to tell what they notice about the equations. Record statements that show how the equations are the same or different for students to refer to as they write.

**Levels 2–4: Reading/Writing**
Prepare students to solve Model It problem 5c by having partners discuss what they notice about the equations in problems 5a and 5b. Encourage them to describe and compare the equations using product and factor. Call on students to share their ideas. Ask others to repeat and rephrase the statements. Record the ideas for students to refer to as they write. Have students read problem 5c and discuss the meanings of order of the factors and change the product. Ensure students understand that, in this context, order refers to the sequence. Have partners discuss their ideas before writing. Encourage them to identify any statements from the earlier discussion that they may use in their answer.

**Levels 3–5: Reading/Writing**
Prepare students for Model It problem 5c by having partners discuss what they notice about the equations in problems 5a and 5b. Encourage them to use precise mathematical language, like product, factor, and integers. Call on several students to rephrase important ideas. Emphasize statements that compare the factors and products in the equations. Have students read problem 5c and use *Say It Another Way* to confirm their understanding. Ask partners to discuss how the question relates to the equations in problems 5a and 5b. Remind students that they should compare the order of the factors and the products of the two equations in their written responses.
Additionally, the Develop Academic Language feature that is included in the conversation tips are presented in a systematic progression throughout the units. Each conversation tip builds on the one introduced previously for the given language function.

**DEVELOP ACADEMIC LANGUAGE**

**WHY?** Support understanding of solved for in mathematical language.

**HOW?** During Model It, display: You can rewrite the second equation so both equations are solved for v. Underline solved for and ask students what this phrase is asking them to do. Explain that solving for a variable means that you find the value of the variable. Have students share what other variable you could solve for in Model It.

DEVELOP ACADEMIC LANGUAGE

**WHY?** Develop awareness of precision in academic language.

**HOW?** Explain that words and phrases that add or qualify details make definitions more precise. Display: Diameter is the distance from one side of a circle to the other, passing through the center of the circle. Ask students to discuss how the final phrase makes the definition more precise. Then have them discuss the use of approximate circumference and exact circumference in Apply It.