California Math Multilingual Learner Report:

i-Ready Classroom Mathematics 6–8

CALIFORNIA CURRICULUM COLLABORATIVE

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i-Ready Classroom Mathematics 6-8

1a Report

Criterion 1	Materials consistently provide opportunities for simultaneous content, math practices, and language development
Indicator 1a	Materials describe major math language goals (informed by language demands, language forms and functions, language objectives) at the lesson and/or unit level.

Each lesson includes Content Objectives and Language Objectives within the Lesson Overview in teacher materials and the language objectives are aligned to the California English Language Development (ELD) Standards, with interpretive, productive, and collaborative modes of communication. Additionally, Differentiation, English Language Learners, often outlines differentiated guidance that connects to language forms that are key to the objectives. Examples include:

Grade 6:

- Unit 1, Lesson 3, Use Nets to Find Surface Area- Full Lesson, Overview, Language Objectives, "Use lesson vocabulary when identifying and comparing models of three-dimensional figures in speaking and writing." Differentiation, ELL Levels 1-3, "Have partners discuss each question using lesson vocabulary. Then display sentence frames for students to complete in writing: When you unfold the___ , the size and shape of the ___ do not change. The sides of the rectangle in the___ are the ___ of the prism." The objectives are explicit and directly tied to the content objectives for the Lesson. The language function shows which students are using language to describe the nets and make connections to surface area.
- Unit 4, Lesson 15, Understand Rate Concepts- Full Lesson, Overview, Language Objectives, "Interpret written explanations and models to understand rate; Explain in writing how to identify a rate as ratio relationship using lesson vocabulary, precise language, and complete sentences; Understand *per* and use it to describe rates when speaking and writing." The objectives are explicit and connected to content objectives, "Understand the concept of a rate; Use rate language to describe a ratio by using similar language like "understand" and requiring students to use "precise language" to describe ratios. The language objectives include language functions like "Interpret" and "Explain in writing.." to establish students' expectations and they align to the CA ELD Framework. The objectives also connect to language forms, like using "per" to describe rates.

- Unit 6, Lesson 24, Order Positive and Negative Numbers- Full Lesson, Overview, Language Objectives, “Use lesson vocabulary and direction and comparison words, such as left, right, up, down, farther, best, and worst, to talk about ordering and comparing positive and negative numbers.” Session 2, DIfferentiation (ELL) for Levels 2–4: “Help students interpret and respond to Apply It problem 9. Display the lesson term *inequality*. Explain that *in-* means *not*. Write an example of an *inequality* and invite students to explain the relationship. Adapt Three Reads to help students make sense of the problem. For Read 1, call on volunteers to tell what the problem is about. For Read 2, have students tell what they need to find. For Read 3, help students tell how they will use the quantities and write the answer: The ___ can dive to a lower elevation because___.” The objectives are explicit and directly connected to content objectives. The language function shows that students are using language to describe their understanding of integers.

Grade 7:

- Unit 2, Lesson 7, Understand Addition and Negative Integers- Full Lesson, Overview, Language Objectives, “Use lesson vocabulary to respond to problems that involve plotting rational numbers and integers on number lines.” Differentiation, ELL Levels 2–4: “Reading/Speaking Use Act It Out to help students interpret Model It problems 1–2. Read problem 1 with students. Draw a number line on the floor. Ask two volunteers to stand on 0 and demonstrate how Jabari and Sofia walk. Help other students describe: Jabari and Sofia moved in opposite___ because___. Each person moved blocks on the line. Have partners read problems 2a and 2b. Ask them to take turns comparing pairs of numbers on the line: The negative number ___ but the positive number___. Both numbers___.” The language objectives are explicit and directly connected to content objectives. The language function shows that students are using language to describe their understanding of integers.

- Unit 6, Lesson 27, Describe Plane Sections of Three-Dimensional Figures- Full Lesson, Overview, Language Objectives, “Express agreement or disagreement during discussion and provide examples and counterexamples to explain.” Differentiation (ELL), “Levels 2–4: Reading/Writing Support students as they interpret Connect It problem 2. Display the terms *parallel, perpendicular,* and *slant*, and the Academic Vocabulary. Ask students to look for the words in the problem. Read the first paragraph and examine the figures. Have students turn and talk about what they notice about the figures. Read problems 2a–c with students. Pause to have students label the bases and planes in the cylinders. Then help them use ``*When* to write about the resulting shape of each plane (for example, When the slice is at a slant, the plane section is an oval).” The language objectives are explicit and linked to the content objectives. The language function shows that students are using language to describe their understanding of 3D figures.

- Unit 7, Lesson 31, Solve Problems Involving Experimental Probability- Full Lesson, Overview, Language Objectives, “Interpret the results of an experiment by identifying the event, the number of trials and favorable outcomes, and the experimental probability of the event; Make predictions about the outcome of an experiment by interpreting the outcomes of a

previous experiment; Understand the lesson vocabulary and use it accurately in speech and writing." Differentiation, English Language Learners, Use with Session 2, Levels 1-3: Speaking/Writing Help students make sense of Connect It problem 4. Read aloud the problem and display the tables from the two experiments. Have partners take turns asking and answering questions about the two experiments using: How many times did Erin roll a 4? She rolled a 4 ___ times. What is the experimental probability of rolling the number 4? The experimental probability is ___ Next, help partners use Stronger and Clearer Each Time to compare the two experiments and write responses. Ask students to read their responses aloud and work with partners to revise their writing as needed. The language objectives require the students to interpret results from an experiment, make predictions about the outcome by interpreting results and use vocabulary accurately in speech and writing. Furthermore the differentiation for English Learners provides sentence frames for response to the predictions and using lesson vocabulary using the Stronger and Clearer language routine. The language objectives are aligned to the California English Language Development Standards Part I: Interacting in Meaningful Ways using the Interpretive and Productive modes of communication.

Grade 8:

- Unit 1, Lesson 3, Work with Sequences of Transformations and Congruence- Full Lesson, Overview, Language Objectives, "Describe a sequence of transformations that map a figure onto a given image; Use the term *congruent* to describe the images that are the result of one or more rigid transformation. Read the symbol≃ in text as *is congruent to."* The language objectives include language functions like "Describe," include a focus on mathematical vocabulary, and are directly connected to content objectives for the lesson.

- Unit 3, Lesson 8, Graph Proportional Relationships and Define Slope- Full Lesson, Overview, Language Objectives, "Explain that the graph of a proportional relationship is a line through the origin; Describe the slope of a line using the term *constant* and different forms of the verb *to change* in speaking and writing; interpret word problems about slope and justify solutions to a partner." The objectives are explicit and connected to content objectives because they lay the foundation for achieving the content objectives. For example, students "describe the slope of a line using constant" connects directly to "understand that slope is the same between two points." The language objectives include language functions like "Explain" and "Interpret and justify" to establish students' expectations that align to the CA ELD Framework.

- Unit 7, Lesson 31, Understand Two-Way Tables- Full Lesson, Overview, Language Objectives, "Use lesson vocabulary to analyze and describe two-way tables and patterns of association." Differentiation, ELL "Levels 1–3: Reading/Speaking To help students interpret information from a two-way table, read Model It problem 3b as students follow along. Help students create a Co-Constructed Word Bank with words that name or refer to parts of the table, such as cell, row, column, center, across, and *down*. Discuss the meaning of the words. Then have students take turns pointing to examples in the table. Reread the problem and ask: What

cells do you need to fill in? What row? How many columns are missing one value? Allow think time, then help students complete the table and describe their answers: The value in row “No” and column “Grade 6” tells how many___.” The language objectives directly connect to the mathematical content with data displays and students use language functions, such as discussion, to build understanding.

1b Report

Criterion 1	Materials consistently provide opportunities for simultaneous content, math practices, and language development
Indicator 1b	Materials describe the math language progression for how students will bridge between everyday and mathematical ways of communicating.

Descriptions of the language progression can be found in a variety of places, including within Differentiation, English Language Learners in the Beginning of Unit and in specific Lesson Overviews, and within the Unit Prepare For resource. According to Unit 1: Beginning of Unit for each grade 6-8, Professional Learning, the “Prepare for” activity and purpose is described. “At the beginning of each unit, Prepare for. . . invites students to use familiar vocabulary to review important prerequisite knowledge. In the Teacher’s Guide (TG), Build Academic Vocabulary provides a set of academic words or phrases students will see throughout the unit. Teachers use the Academic Vocabulary routine—and the Cognate Support routine for speakers of Latin-based languages—to assess familiarity with the terms and preview their meanings. Teachers begin the Collect and Display routine to help students throughout the unit to connect their everyday language to more precise and accurate math or academic language.” This supports students in using their familiar language to review prerequisite knowledge, and continued use of the Collect and Display routine in every lesson of each unit bridges students’ informal language to academic language. Examples include:

Grade 6:

- Unit 1, Beginning of Unit, Unit Prepare For, Build Academic Vocabulary, Prepare for Area, Algebraic Expressions, and Exponents, contains a chart that students complete, with guidance for teachers that helps to break down academic vocabulary (perimeter, area, volume). The table asks students to identify “related words.” For example, “border length,” “around,” and “width” are examples listed for “Perimeter.” This activity supports understanding the math language progression in bridging everyday language to mathematical terms and thinking.

- Unit 5, Lesson 19, Differentiation: English Language Learners, Use with Session 4, Levels 1–3, includes a connection to informal language. “Ask students to number the steps from 1 to 4, and to label the steps with distributive property, commutative property, associative property, rewrite as a sum, group like terms, and combine like terms. Ask students to name the properties used in each step and tell how the properties are used. Reword as needed using math language, such as rewrite, sum, group, combine, and like terms.” A sentence frame is provided to support students as they respond. This example supports the bridging of informal language to academic language as the teacher provides labels and students reword responses, toward the use of more formal academic math language.
- Unit 7, Lesson 30, Session 1, Use Dot Plots and Histograms to Describe Data Distributions, Differentiation, English Language Learners, Levels 2-4 Speaking/Listening, gives guidance to “Display definitions for frequency, histogram, and interval. Call on volunteers to explain the definitions in their own words.” Students explain the definitions and this makes a connection between the student’s everyday language bridging towards academic language.

Grade 7:

- Unit 1, Lesson 1, Solve Problems Involving Scale - Full Lesson, Overview, Differentiation, English Language Learners, describes the math language progression for bridging from everyday to mathematical ways of communicating. “Levels 1-3: Reading/Speaking, Help students make sense of Connect It problem 2. Using a Co-Constructed Word Bank, read the problem aloud and have students circle unknown words and phrases, like *larger, smaller, same exact shape,* and *original figure*. Review the selected terms with students. If appropriate, invite students to tell Spanish cognates. Then clarify the multiple meanings of *scale* in English. Next, point out pairs of words with opposite meanings, like *smaller and larger* and *original figure and scale drawing*. Guide students to use these words to describe the triangles in the problem. Confirm understanding by asking students to identify pairs of corresponding sides in the original figure and scale drawing.” In this example, students have the opportunity to develop a bridge between everyday and mathematical thinking and language. A co-constructed word bank is utilized to identify unknown words, point out opposite meanings, and use words and phrases to describe the triangles, even with the use of cognates.
- Unit 1, Lesson 0, Lesson for the First Five Days; Session 1, Finding Equivalent Ratios, Discuss It, provides opportunities for informal language bridging to more formal mathematical language. “Tell students that the goal of Discuss It is to share their thinking with a partner and to understand their partner’s strategy well enough to be able to explain it. . . Listen to student conversations, resisting the urge to explain or clarify thinking. As you listen, you should make note of students who use different strategies to later share with the class. This is also a good opportunity to make note of words and phrases, especially informal language, that students use.” Students are listening to their partner’s strategy to be able to explain it. They are collaborating to express their ideas and strategies through discussion.

- Unit 6, Beginning of Unit, Unit Prepare For, students sort academic vocabulary in a Venn diagram. In the Build Academic Vocabulary, there is guidance to use prior knowledge of the terms from previous grade levels or content areas, when it states, "Display academic terms used throughout this unit: *horizontal, identical, region, slant*, and *vertical*. Students will likely have some prior knowledge of the terms from math learning in previous grade levels or other content areas." In addition, there are Cognates for Spanish-speaking students to bridge their own language to English. There is also a suggestion for students to bridge informal language to formal language through the use of a language routine. "Support students as they move from informal language to formal academic language by using the Collect and Display routine. Have students refer to the chart during discussion and writing."

Grade 8:

- Unit 2, Beginning of Unit, Unit Prepare For, Build Academic Vocabulary, provides guidance around the use of informal language. "Support students as they move from informal language to formal academic language by using the Collect and Display routine. Have students refer to the chart during discussion and writing." At the beginning of the unit, students prepare for learning by completing a graphic organizer: "What it is," "What I Know About It," "Related Terms," and "Examples." Under "Related Terms," examples are listed in the Teacher Guide that include informal terms (ex; clockwise/counterclockwise) as well as more formal academic vocabulary (ex: rotation). This shows how materials develop language for students to bridge between everyday and mathematical thinking.

- Unit 3, Lesson 13, Solve Systems of Linear Equations Algebraically - Full Lesson, Overview, Differentiation, English Language Learners, provides guidance for the use of informal language connected to content about systems of equations. "Levels 1-3: Reading/Writing, "Help students prepare to answer Connect It problem 2a. Read the problem aloud as students follow along. To help them understand, ask what words in the first sentence mean *equal to*. Have students underline the words. then have them Say It Another Way by using *equal to* instead of *the same as."* In this example, students analyze different ways to express the meaning of *equal to*" and have the opportunity to bridge from informal language they may already know.

- Unit 7, Lesson 29; Session 2, Develop Using a Scatter Plot to Analyze Data, Develop Academic Language provides the opportunity for students to engage with different ways of expressing mathematical terms. "Why? Reinforce the meaning and use of *association* through word origins and synonyms. How? Write association on the board. Explain that it comes from the Latin word associare (to unite) and is often used in academic language. Have students brainstorm synonyms and cognates for the word (*connection, relation, relationship, link, union*, *asociación* in Spanish, *asosyasyon* in Haitian Creole). Have students discuss the use of the word in the session. Ask: *What are the two things connected or related in a linear association*?" Students have the opportunity to make connections between words in their own language and the academic language in the lesson. This activity fosters discourse

around language and supports connecting home language to academic language, for some languages.

2a Report

Criterion 2	Materials provide tasks that require students to make meaning through collaboration by interpreting and producing language.
Indicator 2a	Tasks in materials require students to make meaning through collaboration.

Support for teachers around collaborative tasks can be found in a variety of places within lessons and collaboration is often partner-driven and includes whole class discussion. For example, while differentiating for English Language Learners, students are encouraged to collaborate with a partner, to build on one another's mathematical ideas and to revise math related language and thinking. During the Discuss It Activities as part of the *Try-Discuss-Connect* instructional framework in lessons, teachers are directed to listen for students who use incorrect terms and organize collaboration opportunities in order for students to clarify math content understanding while using all domains of language; reading, writing, listening, and speaking. Examples include:

Grade 6:

- Unit 1, Lesson 5, Explore Expressions with Exponents, Differentiation, English Language Learners, Use with Session 2, "Levels 3–5: Reading/Speaking, "Have students read and discuss Connect It problem 3. Remind them to refer back to the Model It and think about the patterns they notice. With a partner, ask students to develop an explanation that uses the terms *exponent* and *base*. Then have partners turn and talk about how they will evaluate the expression. As partners compare and contrast ideas, remind them to build on ideas when they agree, and explain if they disagree. Then have them talk about their ideas: *My partner thinks that ____ . Our ideas are ____. I agree/disagree because _____*." Students work collaboratively to build on each other's ideas about expressions with exponents.
- Unit 2, Lesson 7, Add, Subtract, and Multiply Multi-Digit Decimals, Differentiation, Use with Session 2, English Language Learners, Levels 3–5: Listening/Speaking, "Facilitate discussion about Connect It problem 5. Have students read the problem independently. Adapt Compare and Connect to have partners compare and contrast the algorithms. Ask partners to take turns naming a way that the addition and subtraction algorithms for whole numbers are similar to or different from the addition and subtraction algorithms for decimals. Remind students to speak in complete sentences. Invite partners to share their sentences with the group and identify the words that signal similarities and differences." Students

work collaboratively to compare and contrast algorithms and produce similarities and differences in an explanation.

- Unit 3, Lesson 12, Session 2, Develop Understanding of Ratio Concepts, Discuss It, "After students complete problems 4 and 5, have them respond to Discuss It with a partner. Encourage them to discuss the differences between comparing part to whole and part to part. Support as needed with questions such as: *What is the value of each part? What is the value of the whole? Is 8:5 a part-to-whole ratio or a part-to-part ratio?* Facilitate Whole Class Discussion, For each problem, have students talk through the ratio relationships." This provides an opportunity for partners to interpret and express the meaning of part-to-whole and whole-to-part relationships.

Grade 7:

- Unit 1, Lesson 1, Solve Problems Involving Scale, Differentiation, English Language Learners, Use with Session 2, Levels 3-5: Reading/Writing, "Have students interpret Connect It problem 4 and craft written responses. Ask partners to discuss the meaning of *actual length* and tell what they should include in their written responses. Remind students that effective writing uses transition words, including sequence words, to show the flow of ideas. Next, have students use Stronger and Clearer Each Time to draft responses independently and explain ideas to partners. Ask partners to discuss if the ideas make sense and are easy to follow. Have students revise their writing based on partner feedback." This task requires students to collaborate to make sense of scale factor. Partners exchange/negotiate ideas, write to explain their ideas, and use peer feedback to improve their written responses.

- Unit 4, Lesson 18, Session 1, Prepare for Writing and Solving Multi-Step Equations, Support Vocabulary Development, students make meaning through collaboration using the Vocabulary Development Activity. "Ask students to consider the term *like terms*. Encourage them to think of specific examples of like terms to clarify their definitions or improve their explanations. Have students work in pairs to complete the graphic organizer. Invite pairs to share their completed organizers, and prompt a whole-class comparative discussion of the definitions, examples, and non-examples given. Have students review Rosa's and Tiffany's statements in problem 2 and discuss ideas with a partner whether their examples in the problems are like terms that can be combined. Encourage students to refer to the examples they listed in the graphic organizer to help them construct their response. Students work in pairs to complete a graphic organizer and define like pairs." In the Student Worktext, Problem 2 states, "Rosa says 4x and -6x are like terms, so they can be combined. Tiffany says 5a and 56 are like terms, so they can be combined. Is Rosa correct? Is Tiffany correct? Why or why not?" Students collaborate in pairs to make meaning of the mathematical vocabulary using the graphic organizer. Students also collaborate through discussion to apply their understanding of *like terms* and compare two potential explanations and debate their accuracy.

- Unit 6, Lesson 28, Find Unknown Angle Measures, Differentiation, English Language Learners, Use with Session 4, Levels 2-4: Reading/Speaking, Students make meaning

through collaboration by making a Co-Constructed Word Bank. "To support understanding of key terms in Apply It problem 6, have students preview the problem and make a Co-Constructed Word Bank. Suggest that students scan the problem once to identify precise math terms, like *adjacent angles*, and then read it again to look for common but important words, like *always, can*, and *both*. Have partners compare and discuss the math terms they selected. Next, read the statements with students and confirm understanding with Say It Another Way before students mark their responses. If needed, prompt students to draw figures or write models to support their reasoning." Students make meaning in a collaborative way by co-constructing a word bank, comparing and discussing the math terms they selected, and by refining their explanations through Say It Another Way.

Grade 8:

- Unit 5, Lesson 22, Session 2, Develop Writing Numbers in Scientific Notation, Discuss It, "Support Partner Discussion, After students work on Try It (where they find the reasonableness of a number in scientific notation), encourage them to respond to Discuss It with a partner. If students need support in getting started, prompt them to ask each other questions such as: *How did you know where to place the decimal point? How did you know what number to use as the exponent for the power of 10? How did you know whether the exponent was positive or negative?*" In this example, students make meaning through collaboration by determining reasonableness and justifying their responses through discussion. The teacher is guided to select and sequence students' strategies and engage them in a whole class discussion where students share their strategies and explain their developing ideas about powers of 10.
- Unit 6, Lesson 27, Session 4, Develop Finding Distance in the Coordinate Plane, Differentiation, English Language Learners, Levels 3-5: Speaking/Listening, "Have students make sense of Apply It problem 3 through partner discussion. Ask students to read the problem independently. Then have partners compare and discuss their strategies. If students need help getting started, have them read and discuss Consider This. Then ask students to solve the problem independently. To prepare for written responses, ask students to read and discuss Pair/Share. Have partners describe other possible solution strategies. Ask: *What strategy do you think Ummi might have used?* Ask partners to discuss how Ummi might have gotten her answer and suggest how she might correct her mistake." In this example, students solve a task, collaborate to discuss multiple solution strategies, correct a mistake in a solution strategy, and practice using mathematical language to describe strategies for applying the Pythagorean Theorem.
- Unit 7, End of Unit, Unit Game, Scatter Plot Association, provides the opportunity to make meaning of scatter plots through collaboration. Student directions state, "Your goal is to create scatter plots that show each type of association between x and y listed on the Recording Sheet. . . Take turns until all the cards are used. Decide whose scatter plot better represents the given association. You may draw a good line of fit to help you decide. The player with the better representation gets 1 point." Teacher directions state, "Players

compare their plots to determine the best representation." In the design of the game, students collaborate to make meaning of scatter plots and potential association of variables in order to compare and determine the best representations.

2b Report

Criterion 2	Materials provide tasks that require students to make meaning through collaboration by interpreting and producing language.
Indicator 2b	Tasks in materials require students to make meaning by interpreting and producing mathematical language.

Teacher support for tasks that require students to make meaning by interpreting and producing mathematical language can be found in a variety of places, including the Differentiation for English Language Learners section of each session (organized by language levels) and embedded within lesson discussion routines. For example, students are prompted to interpret and produce language using sentence frames in both oral and written forms, to use specific academic vocabulary terms and to follow a protocol for guided discussion. Examples include:

Grade 6:

- Unit 3, Lesson 12, Understand Ratio Concepts - Full Lesson, Overview, Differentiation, English Language Learners, Levels 2–4: Reading/Listening, "Help students make sense of Model It problem 4. Read the problem aloud and invite students to ask clarifying questions. Have students Act It Out to model the ratios of tacos to a guest. Organize them into pairs and ask partners to model the problem with manipulatives, such as counters or pieces of paper. Display questions to guide discussion: *How many tacos does each group have? Can every guest have at least one taco?* Repeat the process for the second ratio. Have groups discuss how the second ratio is different. Ask: *Which ratio gives more food to each guest?* Reword any unclear statements, or ask a student to reword. Confirm with the speaker that the rewording is accurate." Students make meaning by interpreting the ratio of tacos to guests through Act It Out as they collaborate to model the problem and produce oral arguments to explain their ideas.
- Unit 5, Lesson 21, Session 2, Develop Solving One-Variable Addition Equations, Try It and Discuss It engages students to produce oral responses using mathematical language. "Before students work on Try It, use Three Reads to help them make sense of the problem. After the first read, have students use the Connect to Culture information to determine the meanings of pixie frog and terrarium. Once students understand the context of the problem, continue with the Three Reads routine." The students then produce math language during the "Discuss It" activity when students describe what they did first to solve the problem.

"After students work on Try It, have them explain their work and then respond to Discuss It with a partner." Students are making meaning by interpreting and producing language through Three Reads and the "Discuss It" prompts.

- Unit 7, Lesson 31, Interpret Median and Interquartile Range in Box Plots - Full Lesson, Overview, Differentiation, English Language Learners, Levels 1-3: Reading/Speaking, provides an opportunity for students to interpret the meaning of the Connect It problem and then share their ideas. "Support students as they interpret and discuss Connect It problems 2a and 2d. Display the term *median*. Use Act It Out to illustrate the meaning of *middle* and *halfway*. Then read problem 2a, pausing after each sentence. Allow time for partners to complete each step. Then help partners restate the steps to find the median." Students illustrate the meaning of *middle* and *halfway* to understand *median*. They then discuss the vocabulary term using sentence frames. This activity allows both interpretive and productive (speaking) math language.

Grade 7:

- Unit 1, Lesson 1, Solve Problems Involving Scale - Full Lesson, Overview, Differentiation, English Language Learners, Levels 3-5: Reading/Speaking. "Have students read and make sense of Connect It problem 2 using a Co-Constructed Word Bank. Encourage students to include key words and phrases, like *scale, scale drawing, scale factor*, and *length of the original figure*. Then ask students to turn to partners and discuss the terms they selected. Have students read the definition of *scale* in the Interactive Glossary and use that definition to explain the meanings of *scale drawing* and *scale factor*. Then have students discuss other meanings of *scale*." Students make meaning of *scale* from the glossary to produce definitions for *scale drawing* and *scale factor*.

- Unit 6, Lesson 26, Session 2, Develop Problem Solving Involving Volume of Right Prisms, students make meaning by interpreting (reading) information and producing mathematical language through discussion. The Try It problem states, "Troy uses colored sand to make sand art. The storage container for his sand is shaped like a right square prism.He pours some of the sand into a display container shaped like a right triangular prism. When he is done, the height of the sand left in the storage container is 4 in. What is the height of the sand in the display container?" Discuss It then states, "After students work on Try It, have them respond to Discuss It with a partner. If students need support in getting started, prompt them to ask each other questions such as: *How did you find the volume of sand in the storage container, both before and after some of it was poured out? What formula shows the volume of sand in the triangular prism? How did you use this formula?*" Students make meaning of the volume of right prisms by interpreting the context and by discussing their ideas with a partner using a set of questions that support the use of mathematical language such as finding volume, prism, triangular etc.

- Unit 7, Lesson 33, Session 1, Explore Compound Events; Additional Practice, provides students with an opportunity to apply their developing understanding of the sample space of a compound event. Problem Notes 3 states, "Problem 3 provides another look at

identifying the sample space of a compound event. This problem is similar to the Try It problem about the sample space for tossing two coins. Instead of a coin toss that has two possible outcomes, this problem features a spinner that has two possible outcomes. Students may solve the problems using a table, tree diagram, or ordered list. Suggest that students use Three Reads, asking themselves one of the following questions each time: *What is this problem about? What is the question I am trying to answer? What information is important?"* Students make meaning by first interpreting the information about solving compound events using the Three Reads routine and then produce mathematical language by drawing and writing possible outcomes.

Grade 8:

- Unit 2, Lesson 6, Session 1, Describe Angle Relationships, students interpret angle relationships in a task and share their developing ideas during class discussion. "After students work on Try It, have them respond to Discuss It with a partner." Teacher guidance includes ideas to listen for and those they may use to select and sequence student work for the discussion. Facilitate Whole Class Discussion, "Call on students to share selected strategies. Remind students that one way to agree and build on ideas is to give reasons that explain why the strategy makes sense. Invite students to reword informal language with mathematical vocabulary. Guide students to Compare and Connect the representations. Call on several students to rephrase important ideas so that everyone hears them more than once and in more than one way. Ask: *What angle relationships do all of these strategies use?* Listen For: *The strategies use the fact that vertical angles have the same measure and that the sum of the measures of supplementary angles is 180 degrees."* The Discuss it Routine allows students to interpret their work from the Try It activity. Students interpret the angle relationships and use productive language in the teacher-guided discussion.

- Unit 4, Lesson 15, Explore Functions, Differentiation, English Language Learners, Use with Session2, Levels 2-4: Reading/Speaking, "Prepare students to answer Model It problem 3a. display the Academic Vocabulary and the lesson terms *linear function, nonlinear function,* and *classify.* Read the problem with students. Help them use *show* and *decide* to Say It Another Way. Ask: *What do the equations show? What do you need to decide?* Make a two-column chart with the headings *Linear* and *Nonlinear*. Then have students graph and classify the equations. Have partners talk about the charts and paraphrase to check if they understand each other's ideas." In this example, students make meaning by interpreting their graphs and by classifying equations, then they produce mathematical language by discussing their charts with partners and by paraphrasing to check for understanding of their partner's ideas.

- Unit 6, Lesson 24, Session 1, Explore Writing Fractions as Decimals, Support Vocabulary Development, includes the opportunity for students to interpret mathematical language connected to rational numbers, "Ask students to consider the term *rational number*. Ensure they do not interchange the terms *rational number* and *fraction.* Every fraction is a rational number, but not every rational number is presented as a fraction. For example, 3 and 0.25

are rational numbers. They are not fractions, although they can be written in fraction form. Have students work in pairs to complete the graphic organizer. Invite pairs to share their completed organizers, and prompt a whole-class comparative discussion of the definitions, known facts, and examples generated. Have students look at the statement in problem 2 and discuss with a partner whether the mixed number can take on other forms." In this example, students make meaning by expressing their ideas in writing (producing) and by interpreting varying forms of rational numbers. Students write, compare orally, and discuss explanations.

3a Report

Criterion 3	Materials provide responsive language and collaborative supports that amplify mathematical language development.
Indicator 3a	Materials guide teachers to be responsive to students' current understandings in both content and language.

According to Program Implementation, Support for All: ELL, "All i-Ready Classroom Mathematics lessons use many approaches to support English Language Learners (ELL). ELL Differentiated Instruction in every session provides scaffolds for the different levels of language proficiency and language domains so teachers can address students' language needs." According to the Council of Great City Schools, 2016, as referenced by iReady Classroom Mathematics as supporting research, "The framework [is] . . . a new vision for mathematics instruction that explicitly attends to the needs of ELLs, addressing the interdependence of language and mathematics." These supports for teachers are found at the Unit level within a resource titled, "Language Expectations", that is specific to content and language expectations within each Unit and there are Lesson-level supports within a section titled, "Differentiation, English Language Learners." Examples of responsive supports at the Unit-level include:

Grade 6:

- Unit 2, Beginning of Unit, Language Expectations, include differentiation strategies for students at varying levels of language development. The guidance states, "The chart below shows examples of what English learners at different levels of English language proficiency can do in connection with one of the Common Core State Standards (CCSS) addressed in the 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." Beginning Level 1 Listening, "Match the word forms of fractions to the number forms on a visual fraction model representing quotients of fractions with a partner." and Advanced Level 5 Listening states, "Categorize numbers as dividends, divisors, or quotients, based on complex oral discourse

involving quotients of fractions using bar models, number lines, and equations." These strategies support teachers in being responsive to students' understanding of content connected to quotients of fractions and to language development simultaneously. Language scaffolds range from heavy to moderate support as students progress within the listening strand.

- Unit 6, Beginning of Unit, Language Expectations, include differentiation strategies for students at varying levels of language development. The guidance states, "The chart below shows examples of what English learners at different levels of English language proficiency can do in connection with one of the Common Core State Standards (CCSS) addressed in the 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." Beginning Level 1 Reading states, "Make sense of word problems about comparing rational numbers by identifying important quantities from visuals and by interpreting the question with visual and teacher support and partner discussion in English and/or the home language." Level 5 Reading states, "Make sense of word problems about comparing rational numbers by identifying important quantities from visuals and by interpreting the question using a dictionary if needed." These strategies support teachers in being responsive to students' understanding of content connected to rational numbers and to language development simultaneously. Language scaffolds range from heavy to moderate support as students progress within the reading strand.

Grade 7:

- Unit 2, Beginning of Unit, Language Expectations, include differentiation strategies for students at varying levels of language development. The guidance states, "The chart below shows examples of what English learners at different levels of English language proficiency can do in connection with one of the Common Core State Standards (CCSS) addressed in their 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. Level 1 Writing states,"With peer support, draw a model that shows opposite quantities making zero pairs. Label with lesson vocabulary using illustrated examples." Level 5 Writing states, "Write a cohesive paragraph with an example and explanation of opposite quantities making zero pairs. Review and revise with a peer." These strategies support teachers in being responsive to students' understanding of content connected to opposite values or zero pairs and to language development simultaneously. Language scaffolds range from heavy to moderate support as students progress within the writing strand.
- Unit 5, Beginning of Unit, Language Expectations, include differentiation strategies for students at varying levels of language development. The guidance states, "The chart below shows examples of what English learners at different levels of English language proficiency can do in connection with one of the Common Core State Standards (CCSS) addressed in their 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. Level 1 Listening

states,"Listen to a paraphrase of a multi-step word problem involving ratios or percent. Show understanding by working with peer or teacher support to select words from a word bank to label a visual representation." Level 5 Listening states, "Listen to a multi-step word problem involving ratios or percent read aloud. Demonstrate understanding by explaining how a visual represents the problem." These strategies support teachers in being responsive to students' understanding of content connected to mutl-step percent problems and to language development simultaneously. Language scaffolds range from heavy to moderate support as students progress within the listening strand.

Grade 8:

- Unit 1, Beginning of Unit, Language Expectations, include differentiation strategies for students at varying levels of language development. The guidance states, "The chart below shows examples of what English learners at different levels of English language proficiency can do in connection with one of the Common Core State Standards (CCSS) addressed in their 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. Level 1 Speaking states, "After partner discussion in English or the home language, describe congruent figures and transformations by identifying math terms from an illustrated word." Level 5 Speaking states, "Justify the congruence between two figures by describing a sequence of rigid transformations by using complete sentences and precise mathematical language." These strategies support teachers in being responsive to students' understanding of content connected to transformations simultaneous to language development. Language scaffolds range from heavy to moderate support as students progress within the speaking strand.
- Unit 7, Beginning of Unit, Language Expectations, include differentiation strategies for students at varying levels of language development. The guidance states, "The chart below shows examples of what English learners at different levels of English language proficiency can do in connection with one of the Common Core State Standards (CCSS) addressed in their 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." Level 1 Writing states, "With an illustrated word bank, determine whether data show a linear association and, if so, describe a good line of fit with peer support." Level 5 Writing states, "Determine whether data show a linear association and, if so, describe a good line of fit." These strategies support teachers in being responsive to students' understanding of content connected to linear models simultaneous to language development. Language scaffolds range from heavy to moderate support as students progress within the writing strand.

Examples of responsive supports at the Lesson-level include:

Grade 6:

- Unit 1, Lesson 6, Explore Common Factors and Multiples, Differentiation, English Language Learners, Use with Session 2, Analyze It & Model It, includes differentiation strategies for students at varying levels of language development. "Level 1-3 Listening/Speaking, Help

students make sense of Analyze It and Model It by making connections. Review the terms *prime factor, greatest common factor,* and *factor tree.* Read both sections aloud, then have students use the terms as they compare Model It and Analyze It. Ask: '*What does Model It use to find the greatest common factor? What does Analyze It use?* Have students compare the numbers, factors, and common factors in the examples. Then have them name their preferred method. Have partners compare and connect ideas: *My partner prefers ___. Our ideas are ___."* Strategies are also provided for levels 2-4 and levels 3-5 and provide opportunities for differentiation as teachers scaffold for content understanding of factors and multiples simultaneously with language development.

- Unit 1, Lesson 4, Work with Algebraic Expressions - Full Lesson, Overview, Differentiation, English Language Learners provides teacher guidance for levels 1-3 listening and speaking when it states, "Facilitate discussion about Connect It problem 3. Read the problem aloud. Display and discuss the terms *coefficient* and *variable*. Point out the Spanish cognates *coeficiente* and *variable*. Model reading the expression. Then have students read it aloud. Have students point as you say *coefficient*. Repeat with *variable*. Then provide sentence frames to help them describe the algebraic expression: *The coefficient is ___, The variables are ___ and ___. The variable ___ represents ___.*" This guidance simultaneously supports content development with expressions and language support with the use of language structure and sentence frames. There are also different scaffolds provided for level students at development levels 2-4 and 3-5.

Grade 7:

- Unit 1, Lesson 1, Session 1, Explore Scale Drawings, Differentiation, English Language Learners, Use with Session 2 Connect It, provides various scaffolding supports for different levels of language development. For example, "Levels 1-3: Reading/Writing, Help students interpret Connect It problem 4 and write responses. Review the Academic Vocabulary and the lesson vocabulary *actual*. Help students rephrase the problem using: *I have a ___. I know the ___ of the scale drawing. I want to find the ___.* Next, have students tell the steps they can use to find the actual length in their own words. help students identify the number of steps and write each step in short sentences. Encourage students to use *find* and *actual length* in their writing." This example shows guidance for teachers to be responsive to students' current mathematical understanding of scale drawings while incorporating language supports, like sentence frames, to support reading and writing strands.

- Unit 4, Lesson 16, Understand Reasons for Rewriting Expressions - Full Lesson, Overview, Differentiation, English Language Learners, Use with Session 1 Model It, provides scaffolding support for various levels of language development. For example, "Levels 2-4: Reading/Listening, Support students as they make sense of Model It problem 1. Help students talk about the problem and model by modifying Notice and Wonder with a Co-Constructed Word Bank. Ask students to list terms related to the page layout and its dimensions, such as *length, width*, and *area*. Then have students tell what they notice or wonder about the model. Call on several students to rephrase important ideas so that

everyone hears them more than once and in more than one way. Record responses for reference." This provides guidance for teachers to provide a structure where students rehearse and rephrase language as they develop understanding of representing expressions.

Grade 8:

- Unit 4, Lesson 15, Differentiation, English Language Learners, Use with Session 3 includes guidance for teachers to support students' understanding of functions at a variety of language development levels. For example, "Levels 2-4: Reading/Writing, Prepare students to answer Apply It problem 5. Read the problem and review *function*. Make a Co-Constructed Word Bank with words students can use to answer the problem, for example, *graph, table, equation, point value*, *above, below, exactly,* and *only*. Then use Act it Out to help students demonstrate *exactly* and *only*. Say: *Show me exactly two pens.* Ask: *Do you have more pens?* Encourage students to use *only* to answer. Then reread the problem and have students turn to partners to discuss and write what needs to happen in each case." Sample sentence stems are also included as a potential support. Teachers are provided this specific guidance to support both content understanding of functions while simultaneously supporting language development through reading, writing, and domain-specific vocabulary forms.
- Unit 6, Lesson 24, Express Rational Numbers as Fractions and Decimals - Full Lesson, Overview, Differentiation, English Language Learners includes differentiation strategies for students at varying levels of language development. "Use Session 1, Connect It. Level 3-5: Reading/Writing, "Help students read Connect It problem 2 by supporting their understanding of precise mathematical language, like *terminating* and *repeating.* Encourage students to use their knowledge of base words and word parts to make sense of the terms. Provide time for students to think about the similarities and differences between the types of decimals. Encourage them to identify other math terms they can use to describe and compare them. then have students turn and talk with partners. Have students prepare explanations for problems 2b. Reinforce that a clear explanation provides reasons using precise language. Have students write responses and compare answers with partners." There is additional guidance for levels 1-3 and for levels 2-4 and the recommended scaffolds connect grade level content with rational numbers and mathematical language development through structured discourse and language functions.

3b Report

Criterion 3	Materials provide responsive language and collaborative supports that amplify mathematical language development.
Indicator 3b	Materials amplify language and mathematics content while maintaining task and text complexity (oral and written).

Supports for teachers to amplify language and mathematics content while maintaining task and text complexity can be found in a variety of places, including at the Unit and Lesson level. For example, “Teacher moves” are embedded across materials and are described as, “Teacher moves are simple but powerful facilitation techniques to guide conversations in which students talk with each other rather than only responding to the teacher. Teacher moves help students to clarify their own thoughts and to hear classmates’ ideas more than once, in more than one way.” These guide teachers to engage students so they are doing the work of the lesson, amplifying mathematical and language development. Examples include:

Grade 6:

- Unit 1, Lesson 3, Use Nets to Find Surface Area - Full Lesson, Overview, Differentiation, English Language Learners, provides differentiated scaffolds for levels of language development. For example, “Levels 1-3: Reading/Writing, Prepare students to write brief responses to Connect It to problem 2. Read the problem aloud. Display and Discuss lesson vocabulary including *edge, face, net*, and *prism*. Use Act It Out to model wrapping and unwrapping a rectangular object. Have partners discuss each question using lesson vocabulary. Then display sentence frames for students to complete in writing: *When you unfold the ___, the size and shape of the ___ do not change*. *The sides of the rectangle in the ___ are the ___ of the prism.* Levels 3-5: Reading/Writing, Prepare students to respond in writing to Connect It problem 2. Read the problem with the students. Ask them to point to an edge and face of the prism to confirm understanding. Have pairs use Act It Out to model unwrapping an object. Ask them to explain how the net is the two-dimensional “wrapping” of a prism. Then have them point to each face on the prism and tell how its size compares to the corresponding face on the net. Encourage students to use the academic term *corresponds* to in their answers. Remind them to use complete sentences and precise mathematical language to explain their ideas.” The content and language scaffolds in the sentence frames provide opportunities for interpretive (reading) and productive language (speaking/writing) while attending to various language levels through differentiated scaffolds. Task and text complexity are maintained with the use of domain specific vocabulary and mathematical discourse.
- Unit 2, Lesson 10, Session 2, Develop Dividing Fractions, Discuss It, Support Partner Discussion, provides explicit teacher guidance for language support. "After students work on Try It, encourage them to respond to Discuss It with a partner. If students need support in getting started, prompt them to ask each other questions such as: *Why did you choose the model or strategy you used? How does your model show 3* $\frac{1}{2}$ *and* $\frac{3}{4}$? Common Misconception: Listen for students who think the quotient is always less than the dividend. As students share their strategies, ask them to explain how to determine the reasonableness of the quotient in this situation." Materials amplify language and mathematics content while maintaining task and text complexity (oral and written) because students actually "Try It" in a written manner, and the teacher might use prompting questions that do not simplify

language but, instead amplify language through student oral responses and justification to the "how" and "why" behind possible content misconceptions.

- Unit 3, Beginning of the Unit, Unit Prepare For (teacher), materials provide guidance for teachers to build academic vocabulary from prior knowledge during the activity when it states, “Call on volunteers to share what they notice about the table and graph. Record key words or phrases that might be used in the second part of the activity when students write about the graphed points, such as *ordered pair, x-coordinate, y-coordinate, x-axis, y-axis*, and *origin*.” In addition, supports are available to support Spanish-speaking students when the lesson states, “The chart below includes the Spanish cognates for academic vocabulary introduced in the unit and in each lesson. To support students whose primary language is Spanish, use the Cognate Support routine described in Unit 1 Professional Learning. Support students as they move from informal language to formal academic language by using the Collect and Display routine.” These language scaffolds explicitly guide the teacher to support students in building their academic vocabulary to amplify understanding of ratio concepts.
- Unit 4, Lesson 18, Session 1, Prepare for Using Percent to Solve Problems, Problem 3, includes the Three Reads strategy as a recommendation for teachers to use in order to support students with content and language development simultaneously. For example, the problem states, “In a survey, 13 out of 20 teachers respond yes to a proposal for a new after-school club. In the same survey, 37 out of 50 students respond *yes*. a. Which group is more in favor of the new after-school club, *teachers* or *students*? Show your work.”. Connected teacher guidance states, “Suggest that students use Three Reads, asking themselves one of the following questions each time: *What is this problem about? What is the question I am trying to answer? What information is important?*” This supports students' understanding of the task’s language without lowering the complexity of the task.

Grade 7:

- Unit 1, Lesson 1, Session 1, Explore Scale Drawings, Try It, Example: “Before students work on Try It, use Three Reads to help them make sense of the problem, Read the problem aloud and ask: *What is the problem about?* Record students' responses to each question in the routine so students may refer to them as they work. Next, ask a student to read the problem again and ask, *What are you trying to find out?* Have the class read the problem chorally for the third read and ask: *What are the important quantities and relationships in the problem*?” The Three Reads Activity addresses the interpretive and productive modes of communication by providing students with opportunities to read through the text multiple times while the teacher asks the students specific questions that support meaning making. The Three Reads activity addresses different modes of communication, and is part of the Try-Discuss-Connect Routine, which supports integrating language and mathematics for all learners, including multilingual learners.
- Unit 4, Math In Action, Expressions, Equations, and Inequalities, Try Another Approach, Booking a Show, provides language scaffolding recommendations to support understanding

of equivalent expressions. For example, Facilitate Whole Class Discussion states, "After reviewing the sample student solution on the previous pages, prompt students to look for different approaches to solve the problem. Ask *What are some different steps you could use to solve the problem?* Listen for Choose a different venue. Use fractions instead of decimals to express the percentages for each of the fees. Use a different number of tickets to estimate the band's earnings." These materials amplify language (oral and written) and mathematical content while maintaining task complexity. After students solve the problem (in writing), they extend their thinking about solutions and explain their steps as the teacher asks students to try another approach and engage in an oral whole class discussion.

- Unit 5, Lesson 20, Session 2, Develop Finding Simple Interest, Develop Academic Language, provides guidance to support students with multiple meaning words. "Why? Develop understanding of the multiple-meaning word *principal.* How? Students are likely familiar with the word *principal* as the leader of a school. Explain that in the context of money, *principal* refers to the amount invested or borrowed. Have students turn and talk about what the two meanings might have in common. Encourage students to use *principal*, as they discuss interest in the Apply It problems and upcoming lessons. If time allows, you might show and discuss the meaning of the commonly confused term *principle,* which refers to a basic belief or value that other beliefs or values are built upon." This language support amplifies development and understanding of operations with percents.
- Unit 7, End of Unit, Unit Review, Performance Task, includes language development support as students build knowledge of statistics. "Before students work on the Performance Task, use Three Reads to help them make sense of the problem. During the first read, have students identify what the problem is about. Collect student responses, such as *Delara is creating her own version of an online game.* For the second read, have students discuss what they are trying to find out, such as *I need to find the experimental probability for each action in the online version.* After the third read, have students describe important quantities in the problem, such as *There were 350 turns in the online version.* Emphasize that they will be choosing either the spinner or deck of cards and determining a number for each action." Teachers are provided with a Three Reads strategy to help the students understand and amplify the language without changing the complexity of the performance task.

Grade 8:

- Unit 1, End of Unit, Self Reflection, "In this unit you learned to…Recognize translations, reflections, and rotations as rigid transformations; Understand that rigid transformations do not change the size and shape of a figure; Perform translations, reflections, and rotations in the coordinate plane; Perform translations, reflections, and rotations in the coordinate plane; Describe a rigid transformation that maps a figure onto an image; Understand that two figures are congruent if one can be mapped exactly onto the other by a sequence of one or more rigid transformations; Perform sequences of translations, rotations, and reflections in the coordinate plane; Describe a sequence of translations, rotations, and reflections that maps a figure onto an image; Use math vocabulary and precise language to describe the

effects of rigid transformations on a figure. Think about what you have learned. Use words, numbers, and drawings. (1)Three examples of what I learned are ___. (2) The hardest thing I learned to do is ___ because___. (3)One thing I am still confused about is ___.". Students first read through the list of skills learned in the unit (interpretive) and respond (productive) using words, numbers and drawings. This task amplifies language and mathematics content by explicitly identifying the list of mathematical skills learned in the unit while providing sentence frames/cloze sentence frames to support productive writing responses.

- Unit 3, Math in Action, Session 2, Plan It and Solve It, Support Student Work, teachers are provided with potential language scaffolds to support students with building knowledge around linear relationships. "Have students work in pairs to discuss their preliminary solution strategies and the Reflect questions. Discuss a variety of approaches as a class. Let students revise their plans and discuss again with a partner. When students are confident that their plans make sense, have them write a complete solution on a copy of the Activity Sheet *Solution Sheet* or a blank sheet of paper." The language rehearsal supports students' language and content development simultaneously.

- Unit 3, Lesson 14, Represent and Solve Problems with Systems of Linear Equations - Full Lesson, Overview, Differentiation, English Language Learners, Use with Session 1 Connect It, provides scaffolding for reading and writing language functions. "Display the Math Term and Academic Vocabulary. Have students offer cognates for the words and add them to a Co-Constructed Word Bank. Then read Connect It problem 2. Have students circle words to add to the Word Bank, for example *unknown, different, system,* and *variable.* Have students refer to the bank as they answer problems 2a–b: *One quantity is ___ and the other is ___. There are two ___, so I need two ___.* Ask students to identify the amounts given for each person and week and then write an equation for each person." A co-constructed word bank provides language support before an activity that requires students to read questions and write responses. There are also sentence frames to support language development through writing. These supports maintain the task complexity while simultaneously supporting language development.

- Unit 6, Lesson 28, Session 3, Develop Finding an Unknown Dimension, Differentiation, Reteach or Reinforce, Visual Model, supports language development as students understand concepts with three-dimensional figures, "If students are unsure about finding the unknown information needed to find the volume of a cone, then use this visual to help them understand. Display a diagram of a cone showing the right triangle formed by its radius, *r*, and height, *h,* and surface distance from the vertex to the base. Ask *What is the relationship between the right triangle and the cone? How can you use the Pythagorean Theorem to find…? How could you find the volume…? Suppose you know the area of the base…Explain.*" These materials amplify language and mathematical content while maintaining task and task complexity (oral and written) because teachers are guided to notice student hesitation in uncovering the unknown information in the problem (in writing). Teachers are then guided to consider a visual model and to utilize opportunities for oral rehearsal of

mathematical language and content understandings. Rather than simplifying content or language, the teacher scaffolds understanding with the use of prompting questions.

3c Report

Criterion 3	Materials provide responsive language and collaborative supports that amplify mathematical language development.
Indicator 3c	Materials include use of language structures or routines that make full use of and engage all forms of communication including math conversations.

According to the Program Implementation, Integrating Language and Mathematics, "i-Ready Classroom Mathematics uses the Try-Discuss-Connect instructional routine to help students engage in productive struggle, participate in mathematical discourse, and make connections between different models and solution strategies. Language plays a critical role in learning during each part of the routine. As part of Try-Discuss-Connect, teachers may guide students toward productive conversations for learning through language routines, teacher moves, and conversation tips. . . Language routines are predictable repeatable formats that help students process word problems and communicate their growing understanding to others." Examples include:

Grade 6:

- Unit 3, Lesson 13, Find Equivalent Ratios, Session 1, Try It provides guidance for the teacher to use the Three Reads routine to support language development. "Before students work on Try It, use Three Reads to help them make sense of the problem. Students should recognize that the quantity of each ingredient is given in the picture. After the third read, listen for students to identify that the amounts of oil and henna powder are important quantities for this problem, but the amounts of sugar and water are not." This routine allows students to make sense of the problem before trying it as the teacher is directed to listen to students speaking to ensure they are identifying the important quantities in the problem. This engages the language domains of reading and speaking.
- Unit 4, Beginning of Unit, Unit Prepare For, Build Academic Vocabulary is a routine found at the beginning of each unit. A graphic organizer is distributed and students individually list what they already know about comparing ratios. Students then meet with a partner to share ideas and add information to their graphic organizer. Teachers are guided to, "Display academic terms used throughout this unit: c*ritique and interpret.* Students will likely have some prior knowledge of the terms from learning in other content areas. Use the Academic Vocabulary routine described in Unit 1 Professional Learning to provide explicit instruction and active engagement. Support students as they move from informal language to formal

academic language by using the Collect and Display routine. Have students refer to the chart during discussion and writing." This is an example of a routine in which students use a specific structure to engage collaboratively in reading, listening, speaking, and writing, about mathematical vocabulary.

- Unit 7, Lesson 30, Session 2, Develop Displaying Data with a Histogram, Try It, provides an opportunity for students to simultaneously build knowledge of data displays and connected mathematical language. "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. Have students paraphrase the text with emphasis on the directions and the question they are asked to answer. Ensure students review all scores in Data Set: Points Scored." Students make sense of the data as they are guided to practice their speaking skills.

Grade 7:

- Unit 1, Lesson 0, Lessons for the First Five Days, Teacher Moves, including "Four Rs: Repeat, Rephrase, Reword, Record", are introduced to support discussions where students engage in listening and speaking about the mathematical content. For example, in Session 2, Model It, the teacher facilitates a discussion using the 4 R's as they "Call on students to *repeat* or *rephrase* classmates' ideas to reinforce understanding. *Reword*, or have a student reword, explanations as needed to clarify or to model use of academic and mathematical language." This routine allows students to practice speaking and listening while comparing solution strategies. The purpose of this activity is also to model the use of mathematical language as stated, "After each student shares their thinking with the class, have a few students repeat or rephrase responses to be sure all students hear the ideas more than once or in more than one way. Reword, or have a student reword, as needed to model use of mathematical and academic language."

- Unit 3, Math in Action, Use Rational Numbers, Session 1, teachers facilitate a Three Reads to support students' processing and understanding of rational numbers. "Present the Estimating problem and use Three Reads to help students make sense of it. For each read, have a different volunteer read aloud each section of information. After the first read, be sure students recognize that more fuel will be used if Captain Alita goes around the thunderstorm, and she may not have enough fuel to make it to her original destination. Ask *What information on the flight plan will change if Captain Alita flies the plane around the storm? What information will stay the same?* Listen For: The flight time will increase, and the amount of fuel used for one hour of the trip will be greater than expected. The amount of fuel on board and the maximum amount of fuel that can be used will remain the same. After the second read, listen for students to articulate that they need to compare the maximum amount of fuel that can be used with the total amount of fuel that will be used if the pilot flies the plane around the thunderstorm." Teachers are provided additional guidance to support the remainder of the routine as they invite students to share their ideas about

rational numbers alongside their language rehearsal and development. This routine is evident across Math in Action sections in each unit.

- Unit 5, Lesson 21, Session 1, Explore Percent Change, Try It, students use a language routine to make sense of percent concepts within the problem. To support this, teachers are guided to use the routine Say It Another Way. “Before students work on Try It, use Say It Another Way to help them make sense of the problem. Ensure they understand what the quantities in the problem represent and what is being asked for as the final answer.” The problem states, “Before editing, a movie is 120 min long, the edited movie is 25% shorter. What is the length of the edited movie?” Guidance supports student engagement in the content as they rehearse language through listening and speaking.

Grade 8:

- Unit 5, Lesson 20, Session 1, Explore Exponent Properties for Zero Exponents, “Try It” provides the opportunity for students to make sense of exponents by using the Three Reads routine. “Before students work on Try It, use Three Reads to help them make sense of the problem. After the first read, ask students to explain what the situation is about. After the second read, ask students to paraphrase what they need to find out. Then after the third read, have students describe the relationships in the problem. Discuss It, Support Partner Discussion, After students work on Try It, have them respond to Discuss It with a partner. listen for understanding of: how to evaluate the expression 2^x for x = 3, x = 2, and x = 1; the pattern from each day to the previous one; how to work backward from Day 3 to Day 0.” This routine is evident across lessons and units where students have opportunities to practice all four language domains. It also emphasizes the importance of getting students to understand the problem first, independent work time, sharing and discussing different approaches to achieve the content and language objectives.

- Unit 6, Lesson 25, Session 1, Explore Numbers That Are Not Rational, Try It, provides an opportunity to use the language routine Co-Craft Questions for the purpose of making sense of rational numbers and building connected mathematical language. “Before students work on Try It, use Co-Craft Questions to help them make sense of the problem. Have students compare questions with a partner. They may revise their question(s) if they wish,” as they try the problem on their own. They then discuss it with a partner as the teacher listens for understanding of: “what makes a number a rational number; what it means for a number to be a terminating decimal; what it means for a number to be a repeating decimal; what an ellipsis at the end of a number means; what it means when digits are under an overbar.” The problem states, “Which of the following numbers do you think are rational? Which do you think are not rational? Justify your answers.” Co-Craft Questions allow students to make sense of rational number concepts as they justify their ideas through listening and speaking.

- Unit 7, Lesson 31, Session 2, Develop Understanding of Two-Way Tables, Discuss It, supports partners discussion about the data displays. “Support Partner Discussion, After students complete problem 3, have them respond to Discuss It with a partner. As partners are talking, remind them to use complete sentences to explain what they did and why. Suggest students

use sentence frames such as I did… first because…, and Then I… because….” This provides the opportunity for students to engage in mathematical discourse as they describe two-way tables and use the language frames to support aligned language development.

3d Report

Criterion 3	Materials provide responsive language and collaborative supports that amplify mathematical language development.
Indicator 3d	Materials include guidance for intentional and flexible grouping structures to ensure equitable participation.

There is general program-level guidance for grouping strategies specific to language development, within the Program Implementation. Guidance for grouping strategies is also found within specific lessons but is responsive to mathematical content knowledge and not regularly and explicitly connected to language development. Other resources, such as the Language Expectations chart are provided that could be used to inform grouping, but guidance to use them to do so is not explicit. Examples of guidance from Program Implementation, Grouping Strategies for Success (English):

- Guidance is provided for teachers to use grouping strategies that support language development. “All students, including English language learners, benefit from participating in a variety of instructional groupings. Successful grouping strategies take into account the activity’s purpose as well as students’ content and language strengths and personal backgrounds. Variation is the Norm. English learners are as diverse a group as native speakers. While they have in common the fact that English is a new language, they vary in factors that affect learning and group participation.” A list of factors are provided for teacher consideration.
- Grouping Guidelines include: “Teacher-created groups are more effective than student-selected groups; Choose a grouping that suits the learning objectives; Let your instructional purpose guide whether your groups are heterogeneous or homogeneous; Consider the nature of the task as well as the language demands.” Additional context is provided for each of these guidelines and teachers could apply these guidelines across Units and Lessons.

Examples of lesson guidance for flexible grouping include:

Grade 6:

- Unit 1, Lesson 6, Session 4, Refine Finding Greatest Common Factor and Least Common Multiple, Monitor and Guide, provides guidance to monitor the students responses to determine potential grouping needs. The activity states, “Before students begin to work, use

their responses to the Start to determine those who will benefit from additional support. Use the Error Analysis table below to guide remediation. Have all students complete the Example and problems 1–3, using Consider This and Pair/Share as appropriate. Observe and monitor their reasoning and guide or redirect students as needed." Teachers can use responses to remediate and provide specific support, including grouping opportunities, but there is no specific guidance to consider language development or to ensure that there is equitable participation.

- Unit 4, Lesson 15, Understand Rate Concepts - Full Lesson, Overview, Differentiation, English Language Learners, includes guidance for using small groups and discourse strategies. "Use with Session 1 Discuss It, Levels 1-3: Listening/Speaking, Familiarize students with language they might use to describe and compare models in Discuss It. Read Discuss It aloud. Review the meaning of rate. Facilitate a small group discussion about the double number lines. Guide students to tell how a double number line can be used to show a rate: This number line shows ___; The line has ___ sections because ___ ; The two lines combined show a rate in ___; Provide a sentence frame to support Discuss It: Both models show the distance in the time in ___; Levels 2-4, Listening/Speaking, To help students describe and compare models, ask questions that students can consider and build on during partner discussion. Read Discuss It with students. Point to the models as you ask: What does this model show about the Red Team's/Blue Team's robot? Provide sentence starters: The double number line shows ___; Each line has sections that represent ___; The two lines together show ___; Then have students turn to partners to compare the models and answer the question in Discuss It." Teachers have guidance for supporting partnerships and groups where students can leverage discourse strategies to build language but the grouping guidance is not based on aspects of language development.
- Unit 7, Lesson 31, Session 4; Refine Interpreting Median and Interquartile Range in Box Plots, Group & Differentiate, provides guidance for grouping strategies connected to understandings of statistics concepts. It also recommends the sequence of activities for each group. "Identify groupings for differentiation based on the Start and problems 1-3. A recommended sequence of activities for each group is suggested below. Use the resources on the next page to differentiate and close the lesson. Approaching proficiency, Reteach Hands-on Activity; Reinforce Problems 4-8; Extending Beyond Proficiency Reinforce Problems 4-8; Extend Challenge. Have all students complete the Close: Exit Ticket." Guidance for monitoring and supporting student learning is stated within each activity. Although the grouping is intentional, it is responsive to content understanding and the grouping structures do not include guidance specific to language development.

Grade 7:

- Unit 2, Numbers and Operations, Beginning of Unit, Unit Opener, Self Check, includes the opportunity for individual reflection as well as partnering and group discussion. "Support Whole Class Discussion, Engage students in a discussion about the skills with questions such as: *Which skills seem related to something you already know? Which skills do you think you*

would use in your everyday life? Why?" Specific questions engage students in discussion but do not provide guidance to support the teacher with equitable participation where all students have an opportunity to speak. The guidance is also not directly connected to intentional grouping strategies for language development.

- Unit 4, Lesson 15, Session 4, Refine Writing Equivalent Expressions Involving Rational Numbers, Group and Differentiate, provides guidance for grouping strategies connected to understandings of expressions. It also recommends the sequence of activities for each group. "Identify groupings for differentiation based on the Start and problems 1-3. A recommended sequence of activities for each group is suggested below. Use the resources on the next page to differentiate and close the lesson. Approaching Proficiency, Reteach Hands-On Activity, Reinforce Problems 4-8; Meeting Proficiency, Reinforce Problems 4-8; Extending Beyond Proficiency, Reinforce Problems 4-8, Extend Challenge." Guidance for monitoring and supporting student learning is stated within each activity. Although the grouping is intentional, it is responsive to content understanding and the grouping structure does not include specific support for language development.
- Unit 5, Math in Action, Session 1, Reflect, provides teacher guidance for partnerships as they reason about random sampling. "As they work, have students share their thinking with a partner and discuss the Reflect questions. As time permits, have students explain their solutions to the class." Reflect Questions include, "Use Models, Would dot plots be a good choice for analyzing the amount of overlap in the distribution of females data and the males data? Why or why not? Critique Reasoning, Think about your partner's inference and the reasoning used to make it. Do you think the inference is reasonable based on the sample data? Explain." While information is provided for teachers to provide opportunities for discourse and partnering, there is no guidance for intentional and flexible grouping structures that ensure equitable participation and/or explicitly support language development.

Grade 8:

- Unit 2, Lesson 6, Session 4, Refine Describing Angle Relationships, Group and Differentiate, provides guidance for small group differentiation. "Identify groupings for differentiation based on the Start and problems 1–3. A recommended sequence of activities for each group is suggested below. Use the resources on the next page to differentiate and close the lesson." There is guidance for differentiating instruction using small groups based on a "Start" activity that requires students to identify coordinates. The "Differentiation" section then gives guidance on how to support students based on where they are struggling. "Students approaching proficiency with interpreting graphs will benefit from matching equations and graphs." The differentiation activity involves pair work aligned to concepts of angle measurements but does not include specific suggestions for grouping based on language development.
- Unit 3, Lesson 8, Session 1, Explore Proportional Relationships and Slope, Differentiation, English Language Learners, provides guidance to support grouping strategies and discourse

connected to understanding proportions. “Level 2-4: Reading/Writing, Read Apply It problem 6 with students. Call on students to rephrase the problem to confirm understanding. Students should recognize that there are three questions to answer. Use Co-Constructed Word Bank to support students as they discuss the problem and respond in writing. Encourage students to share cognates for the words. Then have students solve problem 6 independently and work with a partner to respond in writing. Have partners refer to the Word Bank as they respond and remind them to use complete sentences in their responses.” The grouping structures support collaboration, interpretation, and production of written expression, but teachers are not provided strategies for grouping specific to language development.

- Unit 5, Lesson 20, Session 1, Explore Exponent Properties for Zero Exponents, Discuss It, provides the opportunity for students to engage in discussion and use the compare/contrast function to develop mathematical language connected to properties of exponents. “Support Partner Discussion, After students work on Try It, have them respond to Discuss It with a partner. Facilitate Whole Class Discussion, Call on students to share selected strategies. Remind students to describe what they did and why they decided to do it. Guide students to Compare and Connect the representations. Reword any unclear statements, or ask a student to do so, so that others understand. Confirm with the speaker that the rewording is accurate. Ask, How did these strategies use patterns to find the mass on Day 0? Listen For, Some strategies used the pattern of repeated division by 2 to work backward from Day 3 to Day 0. Others evaluated 2^x for x = 3, 2, and 1, and then observed a pattern that could be used to find 20.” Teacher guidance includes intentional support around grouping strategies but there is no specific support for structuring groups around language strengths or needs.

4a Report

Criterion 4	Materials forefront, value, and use the assets of students, including their home language, experiences, and beliefs, in the teaching of mathematics
Indicator 4a	Materials activate and build on students’ home and community mathematical practices, showing teachers how to elicit and affirm students’ strengths and experiences and connect these to mathematics learning.

Tasks provide access to a variety of identities, experiences, foods, cultural celebrations, as well as ethnic and cultural groups and their histories, inventions, etc. There are opportunities for teachers to connect students’ experiences to the mathematics and these supports can be found at the unit

level, within the “Professional Development'' resource and within lessons in “Connect to Culture” and “Real-World Connections.”Examples from Unit Professional Development include:

- Unit 4 of each grade (6-8) includes Professional Development, Knowing and Valuing Every Learner: Culturally Responsive Mathematics Teaching, with an overview of the ways in which lesson content connects to culture. “Connect to Culture, This feature at the beginning of each lesson in the Teacher’s Guide provides suggestions for some of the elements of CRMT, such as: Valuing students’ identities and helping ensure that all students see themselves in their math texts. Connecting mathematics to the investigation of authentic contexts and issues.”
- Unit 6 of each grade (6-8) includes Professional Development, Bridging Funds of Knowledge to the Mathematics Classroom, with guidance for accessing “Funds of Knowledge” in order to support students in connecting to the mathematics content and connecting to their identities. “Students must see mathematics as part of their lives and identities, and teachers must make students’ experience and reasoning the center of the process of learning mathematics. Tapping into students’ funds of knowledge connects students to the content with relevant authentic situations. Teachers can access and elicit their students’ funds of knowledge and connect that knowledge with mathematics concepts and skills development. One simple way to collect information about your students’ funds of knowledge is to survey families about topics such as the following: Home Language, Family Occupations, Family Activities, Family Traditions, Family Chores.”

Examples from lessons include:

Grade 6:

- Unit 1, Lesson 3, Use Nets to Find Surface Area - Full Lesson, 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. Musical instruments can resemble many different geometric figures. For instance, the cajón (cah-HONE) is a percussion instrument that sounds similar to a drum when struck. It is a box shaped like a rectangular prism. From its beginnings as a basic wooden box, the cajón has been improved by modern technology to create different sounds when hit on different sections. It is now used in professional performances and is preferred for certain styles of music such as African, Peruvian, or flamenco. Ask students about unique instruments that they have seen or played.” The connection to math can be found in the Explore section with a math problem related to the instrument. “Brian learned to build a cajón from his grandfather. A cajón is a box-shaped drum that you play by slapping the front. Brian builds the cajón shown. How much wood will Brian need to build the four vertical sides but not the top or bottom?” This guidance supports the teacher in integrating information from students’ backgrounds into the lesson.
- Unit 4, Lesson 15, Understand Rate Concepts - Full Lesson, 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 3, Apply It, Problem 1, Eating soup dates back to ancient times. The oldest soup bowl was found in the Xianrendong Cave in China and dates back to 20,000 BCE. This period is considered the Later Stone Age, a time in which the earliest organized settlements are thought to have formed. During the Lewis and Clark Expedition in 1804, they initially packed 193 pounds of portable soup, which was a dehydration of broth, eggs, and vegetables. Currently, people in America eat more than 10 billion bowls of soup each year. Chicken noodle soup is thought to be a healing food, and it can in fact help relieve the symptoms of the common cold. If time allows, have students share recipes of their favorite traditional soups." This guidance supports the teacher in integrating information from students' backgrounds into the lesson.

- Unit 5, Lesson 22, Session 1, Prepare for Analyzing Two-Variable Relationships, Real-World Connection, students have the opportunity to connect independent and dependent variables with a real-world connection to sleep's effect on test scores. "Research psychologists study the human brain and human behavior. They conduct research using independent and dependent variables to learn about how people think and behave. First, a hypothesis is formed. A psychologist may want to study whether lack of sleep affects test scores. In this case, the amount of sleep would be the independent variable. The test score, which is the dependent variable, may be affected by lack of sleep. The conclusion of the study either supports or refutes the hypothesis. If less sleep results in lower test scores, the hypothesis is supported. If test scores in the study are unaffected by lack of sleep, the hypothesis is not proven. Results are often published so that psychologists are informed about studies. Ask students to think of other real-world examples when using independent and dependent variables might be useful." This helps to elicit student experiences, providing more opportunities for them to connect to the mathematics.

Grade 7:

- Unit 3, Lesson 13, Express Rational Numbers as Repeating or Terminating Decimals - Full Lesson, 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 3 Try It, Ask students who are familiar with japchae to describe it to the class. Japchae is a very popular dish in Korean cuisine. The main ingredient in japchae is a type of noodle called glass noodles, which are made from sweet potatoes. The dish also includes mixed vegetables and seasoned meat. Ask students to describe a noodle or other type of dish that they have enjoyed from their own culture." This guidance supports the teacher in integrating information from students' backgrounds into the lesson.

- Unit 4, Lesson 15, Write Equivalent Expressions Involving Rational Numbers - Full Lesson, 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, One of the first

popular and successful video games was available in arcades beginning in 1972. The game was an electronic version of ping-pong, in which players moved a cursor to bounce a moving square across the screen. The game used a very simple scoring system, in which 1 point was awarded after each play. Modern video games employ a variety of complicated scoring systems, in which players gain or lose multiple points as a result of various actions. Ask students to share their experiences with accumulating points playing video and computer games." This provides the opportunity to elicit information about students' personal interests to engage and help students make sense of the Try It problem within the lesson about calculating points earned in a video game.

- Unit 5, Lesson 23, Session 1, Prepare for Reasoning About Random Samples, Real-World Connection, students have the opportunity to connect random sampling with a real-world connection to a survey of what people spend time watching on TV. "Television, radio, and other media platforms survey people across the country about what they watch and listen to. The Nielsen ratings system chooses about 37,000 households that are as proportional to the census data as possible to best represent the approximately 120 million households in the United States. The data can then be used to make inferences about the total number of viewers for a particular show without having to know what each individual in the country has watched. . . Asking students to think of other real-world examples when surveying a sample of a population is useful." This guidance helps to elicit student experiences, providing more opportunities for them to connect to the mathematics.

Grade 8:

- Unit 1, Lesson 2, Work with Single Rigid Transformations in the Coordinate Plane - Full Lesson, Connect to Culture, "Use these activities to connect with and leverage the diverse backgrounds and experiences of all students. 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 . . ." In this example, the materials spotlight, value, and use student assets, including experiences and cultural celebrations, to teach mathematics.

- Unit 2, Lesson 7, Describe Angle Relationships in Triangles - Full Lesson, Connect to Culture, "Use these activities to connect with and leverage the diverse backgrounds and experiences of all students. Session 3, Apply It, "Invite students to share their experiences with ironing and ironing boards. Ironing boards have been around since the 9th century, when Vikings would press their clothes into shape using heated rocks. . .Then, in 1892, an African American woman named Sarah Boone patented an adjustable folding ironing board with a narrow, curved shape to make it easier to iron shirts. Modern ironing boards look a lot like her design." In this example, the materials value students' identity and real-life experiences, highlighting common funds of knowledge and forefronting African American contributions in the teaching of mathematics.

- Unit 6, Lesson 26, Session 1, Prepare for The Pythagorean Theorem and Its Converse, Real-World Connection, students have the opportunity to apply the Pythagorean Theorem to a real-world connection with TV aspect ratios. “Early film and TV had a screen ratio of width to height, called the *aspect ratio*, of 4:3. By the 1950s, many families had TVs, so film studios, in an attempt to get people into movie theaters, changed the aspect ratio of their films to about 12:5. This gave movie audiences a wide, panoramic view for a more dramatic presentation. . . Ask students to think of other real-world examples when the Pythagorean Theorem might be useful.” This guidance helps students apply mathematical concepts to their world, providing more opportunities for them to connect to the mathematics.

4b Report

Criterion 4	Materials forefront, value, and use the assets of students, including their home language, experiences, and beliefs, in the teaching of mathematics
Indicator 4b	Materials explicitly guide teachers to create opportunities for students to use home language and practices as resources for learning mathematics and to express their culture and identity.

i-Ready Classroom Mathematics provides numerous resources translated into Spanish and into some other languages, but guidance for teachers to encourage students to use home language as a resource for learning mathematics occurs only occasionally. Additionally, there are some program-level resources that include guidance for incorporating student assets into classroom instruction and, while this could include home language, it is not consistently called out for teachers.

Program-level supports for home language:

- Grade 6-8 Program level materials provided in Spanish for teacher and students: Classroom Resources online, Spanish Edition of SBAC questions, Discourse cards in Spanish, Discourse Cube, Activity Sheet Resources, Data Sets, Graphic Organizers, Student Handbook, Multilingual Glossary, Bilingual Glossary, Spanish Glossary, Academic Vocabulary Glossary, Try-Discuss-Connect Routine Resources, AssessmentsTeacher Toolbox, Program Implementation, and Discourse Cube-Spanish. The Discourse Cube and Discourse Cards include information in Spanish for providing opportunities for mathematical discussion. For example, the cube has “*porquè*, *què más puedes probar*?”. The Discourse Cube-Spanish creates an opportunity for students to use home language and practices as resources because it provides students with an opportunity to respond in their primary language and

express their cultural identity. While the Cube can benefit some students, the information provided on the Discourse Cube is limited to Spanish and does not include other languages.

- Program Overview, Support for Language, Discourse, Community, and Culture, "i-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."
- Grade 6-8, Unit 1, Professional Development, "Cognate Support Routine: 1. Ask students to identify terms that look or sound similar to words in their home language, 2. Check to see if the identified terms are cognates, 3. Write the cognates and have students copy them next to the English word, 4. Pronounce the English term and its cognate or ask a volunteer to do so. Have students repeat." In this example, materials explicitly guide teachers to create an opportunity for students to use their home language, Spanish in this case, as a resource for learning mathematics and to express their identity.

Lesson-level support for home language:

Grade 6:

- Each lesson includes a Family Letter that includes an overview of the mathematics within the lesson and an activity that can be done at home to connect to the content of the lesson. These are included in nine languages: English, Spanish, Arabic, Korean, Mandarin, Portuguese, Russian, Tagalog, Vietnamese. For example, Unit 1, Lesson 7, Family letter includes (English), "This week your student is learning how to add, subtract, and multiply decimals up to the thousandths place. Previously, your student learned how to add, subtract, multiply whole numbers using a variety of methods. . .Do this activity together to investigate decimals in the real world. Have you ever noticed that some foods are more popular than others? Each year between 2007-2010, the average adult American ate 135.05 cups of potatoes, 51.1 cups of dark green vegetables, . . .where else do you see decimals in the world around you?"
- Unit 6, Lesson 25, Understand Absolute Value - Full Lesson, Overview, Differentiation, English Language Learners, Levels 1-3: Speaking/Listening, "Have students turn to partners to discuss what they did or read about in Model It. Then help them suggest words they can use to talk about absolute value. Add relevant words to the word bank, including *opposite, positive, negative, zero*, and *distance*. Have partners use sketches, gestures, and everyday language to show an example of each term." There is guidance for the teacher to suggest words they can use to talk about absolute value and add words to the word bank. Although the guidance does not explicitly call out home language, partners use sketches, gestures, and everyday language to show an example of the terms. This allows students to represent language in a variety of ways.

Grade 7:

- Each lesson includes a Family Letter that includes an overview of the mathematics within the lesson and an activity that can be done at home to connect to the content of the lesson. These are included in nine languages: English, Spanish, Arabic, Korean, Mandarin, Portuguese, Russian, Tagalog, Vietnamese. For example, Unit 4, Lesson 16, Family letter includes (English), "This week your student is exploring how rewriting an expression in an equivalent form can help them look at a situation in a different way. Your student has already learned what it means for two expressions . . .Do this activity together to investigate reasons for rewriting expressions. Each situation below is represented with a pair of equivalent expressions. Which expression do you like best for each situation? What questions could that expression help you answer? (2 situations are included)"
- Unit 1, Lesson 1, Solve Problems Involving Scale - Full Lesson, Overview, Differentiation, English Language Learners, Levels 1-3: Reading/Speaking, "Help students make sense of Connect It problem 2. Using a Co-Constructed Word Bank, read the problem aloud and have students circle unknown words and phrases, like *larger, smaller, same exact shape*, and *original figure*. Review the selected terms with students…then clarify the multiple meanings of scale in English. Next, point out pairs of words with opposite meanings, like smaller and larger and original figure and scale drawing. Guide students to use these words to describe the triangles in the problem. Confirm understanding by asking students to identify pairs of corresponding sides in the original figure and scale drawing." This provides the opportunity to bridge everyday language and mathematical thinking and language. A co-constructed word bank is utilized to identify unknown words, point out opposite meanings, and use words and phrases to describe the triangles, with the use of cognates.

Grade 8:

- Each lesson includes a Family Letter that includes an overview of the mathematics within the lesson and an activity that can be done at home to connect to the content of the lesson. These are included in nine languages: English, Spanish, Arabic, Korean, Mandarin, Portuguese, Russian, Tagalog, Vietnamese. For example, Unit 7, Lesson 29, Family letter includes (English), "This week your student is learning to make and use scatter plots. A scatter plot is a graph that shows two-variable data plotted as ordered pairs. Scatter plots are useful tools for revealing relationships between two variables. . . Do this activity together to investigate scatter plots in real life. Scatter plots are useful to determine the relationship between two variables. They can be used in many real-world contexts! . . .How would you describe the relationship between these two variables? What other situations in your everyday life would have this same relationship?"
- Unit 2, Lesson 11, Determine the Number of Solutions to One-Variable Equations - Full Lesson, Overview, Differentiation, English Language Learners, Levels 2-4: Reading/Speaking, "Read Connect It problem 2 with students. Display the lesson vocabulary *infinitely many*. Have students compare and discuss the words. Then display the Math Terms. Invite students to provide examples of variables and values. Other students can share cognates for the words." In this example, guidance is provided for teachers to create an opportunity for

students to use their home language as a resource for learning mathematics and to express their identity.

4c Report

Criterion 4	Materials forefront, value, and use the assets of students, including their home language, experiences, and beliefs, in the teaching of mathematics
Indicator 4c	Materials guide teachers to establish and maintain a classroom culture that encourages student participation and agency for language development.

Unit 4, Beginning of Unit, Professional Development, Aims of Culturally Responsive Mathematics, outlines guidance for a culturally responsive classroom culture. “Value students’ sense of identity. Build on students’ cultural assets. Expand students’ sense of possibility. Empower students to analyze issues and generate solutions.” This encourages teachers to value student ideas, and empower them to build a sense of agency over their learning as they analyze issues and generate solutions. Resources within the materials highlight the importance of student mathematics agency and they can be found at the program-level and within specific lessons. Examples from the program-level:

- Grades 6-8, Unit 2, Beginning of Unit, Professional Development, Establishing Classroom Environments That Support Mathematical Discourse for ALL Learners, “Strategy 1: Help students work with and rely on one another. Students should seek assistance from peers before defaulting to the teacher. Discuss It provides opportunities for students to turn and talk about the math before whole-group discussion.” This resource is included within Unit 2 for each grade.
- Grade 6-8, i-Ready Classroom Central, Community tab, Promote Collaborative Learning, Reference Sheet: Norms and Classroom Routines That Support Learning Every Day. This document includes resources to build classroom norms and an opportunity for students to reflect on their beliefs. There is guidance on shared norm building when it states, “Classroom norms are not rules to adhere to, but rather agreed-upon beliefs and behaviors that make all students feel welcome, engaged, and ready to learn. By creating norms as a class, students will have buy-in for fully participating with confidence.” The document also encourages wait time to promote equitable participation when it states, “Individual Think Time: Giving students individual think time allows them to formulate ideas and engage in productive struggle. This builds their competence to keep persisting through challenges.” In the “Beliefs Statements Reflection Sheet”, students are encouraged to share both ideas and

mistakes when it states, “The mathematics classroom is a safe place where students are encouraged to share their ideas and mistakes, respectfully critique the reasoning of peers, and work together when they are stuck.” Overall, this document provides opportunities for teachers to build a classroom culture that promotes community and collaboration, valuing the input of student ideas.

- Unit 1, Lesson 0, Understanding the Try-Discuss-Connect Routine, “The routine helps students achieve greater mathematical agency by encouraging proficiency and rigor within a collaborative structure…that encourages students to take ownership of their own learning through meaningful mathematical discourse…When only one way is presented, students may think they ‘didn’t do it right’, even when their solution process or thinking is accurate. Students build greater agency with language that is critical for understanding the mathematics…Students have multiple opportunities to produce language as they make sense of a problem.” Materials outline the purpose of the Try-Discuss-Connect Routine, structuring lessons across the materials, in which a classroom culture is developed that encourages student participation, risk taking, equitable participation, sharing of ideas, helping others, and having ownership over their own learning.

Examples from the lesson-level:

Grade 6:

- Grade 6, Unit 1, Lesson 1, Session 2, Develop Finding the Area of a Parallelogram, 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: Counting whole squares and whole squares that can be formed from partial squares, Tracing the parallelogram onto grid paper, then cutting and rearranging familiar shapes to form a rectangle, Using a corresponding rectangle to find the area by multiplying base by height.” The lesson proceeds with a whole class discussion and using student work samples to guide the discourse promotes student agency in the math classroom.
- Unit 4, Beginning of Unit, Unit Prepare For, Prepare for Unit 4, “Read the directions and the headings in the graphic organizer, or have a student do so. Call on volunteers to explain the task in their own words. Allow time for students to think about what they already know about comparing ratios and fill in as many ideas as possible in the graphic organizer. . . have students meet with a partner to share ideas and add new information to the organizer. Circulate and validate responses and clarify any misconceptions.” This guides the teacher to encourage students as they validate responses and address misconceptions. Also, students are guided to share ideas and add them to their own graphic organizer and to collaborate and share ideas with classmates.

Grade 7:

- Unit 1, Math in Action, Session 2, Discuss Models and Strategies, students engage with the “Painting the Art Room” task. “Present the Painting the Art Room problem and use Three

Reads to help students make sense of it. Have different volunteers take turns reading aloud each section of information. Ask: *What are some clarifying questions you could ask about the details of the problem?* Listen For: Student responses may include questions about the shades to use, the ratios of purple to white paint for each shade, and the goal of the task. Invite volunteers to point out what is known and what they need to figure out. Ask: *How can you calculate the number of gallons of paint you will need to cover all four walls and the trim?* Listen For: Since one gallon covers approximately 350 square feet, you can divide the total area of the walls and trim by 350. . . Discuss possible steps, ways to organize the information, and techniques that might be helpful. Invite students to take notes." During the "Plan it and Solve It" stage, "Have students work in pairs to discuss their preliminary solution strategies and the Reflect questions, Discuss a variety of approaches as a class. Let students revise their plans and discuss again with a partner." Teacher guidance includes opportunities for contributions from all students, including MLLs, throughout each stage. Teachers are provided clarifying questions to push students to use their own thinking. This encourages students to take academic risks when sharing tentative ideas and by providing opportunities to discuss problem-solving approaches and possible solutions with a partner or whole class. The information gained during discussions can help other students confirm or adjust their plans.

- Unit 7, Unit Opener-Teacher, Self Check, "Take a few minutes to have each student independently read through the list of skills. Ask students to consider each skill and check the box if it is a skill they think they already have.Remind students that these skills are likely to all be new to them and that over time, they will be able to check off more and more skills. Support Whole Class Discussion. Engage students in a discussion about the skills with questions such as: Which skills seem related to something you already know? Which skills do you think you would use in your everyday life? Why? Support Growth Mindset- At the end of the unit, have students review the skills on the Student Book Self Reflection page and work in pairs to respond to the prompts. Encourage students to revisit the work they did in each lesson." The Self Check Routine found at the beginning of every unit encourages student participation and agency by asking students to consider the skills in the unit. Whole Class Discussion encourages student participation by asking students to share the skills that seem related to something that they already know. Support Growth Mindset encourages student agency and participation by having students work in pairs to reflect on their mathematical learning at the end of the lesson.

Grade 8:

- Unit 5, Lesson 21, Session 2, Develop Estimating Quantities Using Integer Powers of 10, Facilitate Whole Class Discussion. "Call on students to share selected strategies. Prompt students to check their understanding by trying to paraphrase the speaker's ideas. They can ask questions about ideas that are unclear. Guide students to Compare and Connect the representations. To engage all students, ask them to turn and talk to discuss the struggles they overcame while working on this problem." Teachers are provided guidance for building community by helping students listen and paraphrase others' ideas, ask questions, share

their challenges, and explain how they moved toward understanding and independence. This model encourages students to participate and take risks, actively listen to peers, persevere, and celebrate their understanding.

- Unit 7, Beginning of Unit, Math Background, Bivariate Categorical Data, Understanding Two-Way Tables, "To help students understand how two-way tables are constructed and used, give them an opportunity to collect bivariate categorical data and display their results in a two-way table. For example, they might ask their classmates whether or not they have pets and whether or not they have siblings." Explicit guidance is provided for teachers to support community and peer relationships while making meaning of math concepts. Students actively and equitably ask and answer questions of peers so students can apply a math concept. Class MLLs can participate through responses that highlight familiar home/family connections.

5a Report

Criterion 5	Materials provide opportunities to consistently assess, analyze, and communicate progress while students have opportunities to incorporate feedback.
Indicator 5a	Materials include a formative assessment plan for language alongside content that includes a connection to established unit/lesson language goals.

The assessment plan within the program includes routine formative assessments. Although the plan to assess mathematical content is consistent, there is not always an explicit plan to formatively assess progress of language objectives. Evidence of assessment of language objectives can be found both at the beginning and at the end of each unit within the Self Checks, Self Reflection, and the Vocabulary Review. In addition, there is guidance within lessons for the teacher to formatively assess student language during discourse opportunities, included as things for the teacher to "listen for." Examples include:

Grade 6:

- Unit 2, Beginning of Unit, Unit Opener, Self check provides I Can . . . statements for students to self assess unit skills at the beginning and throughout the unit, including math language. For example, I CAN…"Add, subtract, and multiply multi-digit decimals using standard algorithms. Divide multi-digit whole numbers and multi-digit decimals using standard algorithms. Divide fractions. Solve real-world problems that involve dividing fractions. Find the volume of a right rectangular prism with fractional edge lengths. Use math vocabulary

and precise language to describe a strategy and how that strategy is used to solve a problem."

- Unit 4, Lesson 18, Session 1, Explore Percent Problems, Try It-Discuss It-Connect It, is a lesson routine that supports teachers formative assessment of students. Specifically, the Discuss it guides the teacher to "Listen for understanding of: 19 and 17 as the number of wins for each player; 25 and 20 as the total number of games played for each player; the need to use equivalent ratios to find who has the better winning record." Teachers listen for student understandings during partner discussion after they have tried a problem on their own. Teachers then "Select and Sequence Student Strategies'', including misconceptions to Compare and Connect the strategies from the discussion. The Connect It prompts teachers to, "Look Back Look for understanding that the two winning records are ratios that need to be compared and that, in this problem, finding equivalent part-whole ratios with the same whole allows for comparison." While formative assessment of language is embedded in these notes, there is no explicit guidance to assess language objectives within.
- Unit 5, End of Unit, Vocabulary Review, Self-Assessment states, "Students have interacted with and use unit math and academic vocabulary throughout the unit in listening, speaking, reading, and writing. Use this activity to review the terms and help students check their understanding of definitions." Problem 2, provides the opportunity for students to demonstrate academic math language as it is assessed at the end of the unit. For example, "What is a solution of an equation? Explain one way to check a solution of an equation. Use at least four math or academic vocabulary terms in your explanation. Underline each term you use." Students also review the unit vocabulary and check their understanding of the definitions. "Have students read the vocabulary terms and put a check mark by the terms they can use in speaking and writing. Students can look up words they do not know." Teachers are advised, "If time allows, this is a good opportunity to have students work in pairs to read and provide feedback on responses. Feedback should focus on the word meaning, accuracy, and clarity of the response."
- Unit 6, Lesson 24, Order Positive and Negative Numbers - Full Lesson, states the Language Objective, "Use lesson vocabulary and direction and comparison words, such as left, right, up, down, farther, best, and worst, to talk about ordering and comparing positive and negative numbers." In the Self-Reflection at the End of Unit, students are prompted to reflect on their learning and states, "Tell students that revisiting the list of skills is an opportunity for them to reflect on their learning and progress during the unit." The Self-Reflection prompt, "Compare and order positive and negative numbers" directly relates to the Language Objective of using comparison words to talk about ordering and comparing. In addition, the Vocabulary Review in the End of Unit includes a question related to comparing rational numbers and integers when it says, "How are rational numbers and integers alike? How are they different?"

Grade 7:

- Unit 1, Lesson 1, Session 1, Explore Scale Drawings, students practice using mathematical language during "Try It, Discuss It, Connect It,". Then, language and content are simultaneously assessed on the Exit Ticket. During the Try It, students use 3 Reads to make sense of the problem which includes identifying which smaller triangle is the same shape as the one provided. During "Discuss It," students respond to "How did you begin to solve the problem?" with a partner while teachers are listening for understanding of comparing angles and side lengths of triangles. During the "Connect It", students look back to see that shapes can be described or classified according to relationships among the side lengths. Students complete the exit ticket," Reflect: Yukio says the scale from triangle DEF to triangle ABC is 3:1. Is Yuko correct? Explain." This aligns to the lesson's language objective, "Understand the term scale drawing and use it to describe figures with side lengths in equivalent ratios" and it aligns to the content goal, "Understand that scale drawings are figures with side lengths in equivalent ratios."
- Unit 2, End of Unit, Vocabulary Review, Self-Assessment states, "Students have interacted with and used unit math and academic vocabulary throughout the unit in listening, speaking, reading, and writing. Use this activity to review the terms and help students check their understanding of definitions." Problem 1 and 2 state, "How are opposite numbers and zero pairs related? How are integers and rational numbers the same and different?" Students also review the unit vocabulary and check their understanding of the definitions. "Have students read the vocabulary terms and put a check mark by the terms they can use in speaking and writing. Students can look up words they do not know." Teachers are advised to, "If time allows, this is a good opportunity to have students work in pairs to read and provide feedback on responses. Feedback should focus on the word meaning, accuracy, and clarity of the response."
- Unit 3, Lesson 13, Session 1, Explore Terminating or Repeating Decimals, students practice using mathematical language during Try It, Discuss It, Connect It. Then,language and content are simultaneously assessed on the Exit Ticket. During the Try It, students use 3 Reads to make sense of the problem which includes comparing distances given in different forms. In Discuss It, students respond to "What did you do first to compare the distances" with a partner while teachers listen for understanding of "the need to express both numbers as two fractions, or two decimals to compare them." In Connect It, students look back to see that the quantities can be compared either as two fractions or as two decimals. Students complete the exit ticket, "Reflect, Is the decimal 0.101010 . . . a *terminating decimal* or a *repeating decimal?* How do you know?" This aligns to the lesson's language objective, "Use lesson vocabulary to explain whether the decimal form of a rational number is terminating or repeating," and it aligns to the content objective, "Correctly use repeating bar notation to represent a repeating decimal."
- Unit 6, Unit Opener Teacher, Self Check, "Take a few minutes to have each student independently read through the list of skills. Ask students to consider each skill and check the box if it is a skill they think they already have. Remind students that these skills are likely to all be new to them and that over time, they will be able to check off more and more skills.

Support Whole Class Discussion, Engage students in a discussion about the skills with questions such as: Which skills seem related to something you already know? Which skills do you think you would use in your everyday life? Why? Support Growth Mindset, At the end of the unit, have students review the skills on the Student Book Self Reflection page and work in pairs to respond to the prompts. Encourage students to revisit the work they did in each lesson." Big Ideas include, "The major themes of this unit are: You can use what you know about writing and solving equations to solve problems involving area, surface area, volume, and angle relationship; knowing about surface area and volume of rectangular prisms can help you find the surface area and volume of any type of prism or any figure composed of prisms; knowing about wo-dimensional figures can help you identify the shape formed when a plane slices a three-dimensional figure; you can use what you know about angles, triangles, and quadrilaterals to draw shapes with a given set of characteristics." Students' self-assess math content and language and teachers are provided guidance to follow up with students and adjust subsequent instruction as needed. Evidence of the connection to established unit goals for content and language is found in the Big Ideas section.

Grade 8:

- Unit 1, Lesson 3, Work with Sequences of Transformations and Congruence - Full Lesson, Overview. Language Objectives, include, "Describe a sequence of transformations that map a figure onto a given image. Use the term *congruent* to describe the images that are the result of one or more rigid transformations Read the symbol $\simeq$ in text as *is congruent* to." Language objectives align with the mathematics objectives of the lesson and can be formatively assessed. For example, in Session 1, the exit ticket includes, "Reflect, How can you use a sequence of transformations to show that one figure is congruent to another?"
- Unit 1, End of Unit, Unit Review, provides opportunities for students to demonstrate their understanding of key unit learning objectives Student directions state, "Use what you have learned to complete these problems." For example, Problem 3 states, "Does figure *B* appear to be a rigid transformation of figure *A*? Use parallel sides to explain your reasoning." Students also complete a performance task where they have to describe the transformations involved. The scoring guide includes, "4: The student's response is accurate and complete. All three rigid transformations (reflection, rotation, and translation) are included. The coordinates for the character's original and final location and a description of the transformations that took place are included." The Unit Review activity asks students to reflect on and demonstrate progress toward the unit's mathematics and language skills. In this example, formative assessment is aligned to lessons' language and learning goals, with guidance for teachers to collect data at the end of the unit in addition to before and during lessons.
- Unit 3, Unit Opener Teacher, Self Check, "Take a few minutes to have each student independently read through the list of skills. Ask students to consider each skill and check the box if it is a skill they think they already have. Remind students that these skills are likely to all be new to them and that over time, they will be able to check off more and more skills.

Support Whole Class Discussion, Engage students in a discussion about the skills with questions such as: Which skills seem related to something you already know? Which skills do you think you would use in your everyday life? Why? Support Growth Mindset, At the end of the unit, have students review the skills on the Student Book Self Reflection page and work in pairs to respond to the prompts. Encourage students to revisit the work they did in each lesson." Big Ideas includes, "A linear equation with two variables has a graph that is a straight line. Knowing about ratios and unit rates can help you make sense of the slope and y-intercept of a line; Linear equations in one variable can have one solution, no solution, or infinitely many solutions; A system of linear equations is a group of related linear equations where a solution makes all the equations true at the same time. you can use what you know about solving equations to solve systems of equations." Students' self-assess math content and language and teachers are provided guidance to follow up with students and adjust subsequent instruction as needed. Evidence of the connection to established unit goals for content and language is found in the Big Ideas section.

- Unit 5, Beginning of Unit, Unit Prepare for, Student, Prepare for Exponent Properties and Scientific Notation, "You have learned to use reasoning about powers, exponents, and factors. Write what you know about the term *cube* in the boxes. Share your ideas with a partner and add new information to the boxes as needed." Boxes include: Numerical Expressions, How to Say the Expression, and Related Words. The Unit Level Prepare For page provides a formative assessment plan that assesses a student's knowledge of exponents based on everyday language and ideas related to the unit and lesson goals. Also, the activity guides students to meet with a partner and compare their ideas. This provides another formative assessment opportunity for teachers to "listen for" students' conversations to gauge language and content support that the students may require.

5b Report

Criterion 5	Materials provide opportunities to consistently assess, analyze, and communicate progress while students have opportunities to incorporate feedback.
Indicator 5b	Materials include guidance for gathering, analyzing, using, and communicating language and content data from formative assessments (in a cycle of continuous improvement).

While language objectives are regularly included within lessons and they often connect to content objectives and lesson formative assessments, guidance for communicating language performance/development is not explicitly outlined. In the materials, teacher guidance to analyze and use data is included within Comprehension Checks, the Unit Quiz, Differentiation, Explore, Math

in Action, and other lesson materials. There is also guidance for communicating data in the Family Resource Center within My Progress. Examples of program-level guidance include:

- Online Educator Learning, Using Data to Plan Instruction, is an online professional development module for teachers. “This course is for teachers in preparation of the Using Data to Plan Instruction facilitated professional development session. This course provides an overview of three Diagnostic reports that will provide you with actionable insights into your students' strengths and opportunities for growth. In addition, you will consider how you can use these insights to inform instructional decisions. At the end of this course, you will have a printable Summary of Class Strengths! In this course, you will focus on: How to read and interpret the Diagnostic Results (Class), Diagnostic Results (Student), and Prerequisites reports; How to use the Diagnostic Results (Class) and (Student) reports together to inform instructional decisions.” This resource provides teachers with guidance in analyzing, interpreting, using, and communicating content data at the class and student level. The diagnostic results provide actionable insight to inform instructional decisions that support a cycle of continuous improvement. Guidance for the monitoring of data supporting language development is not present.
- Teacher Dashboard, Reports, Prerequisites Report. Evidence can be found under Data Analysis Guide, District Data, Suggested Actions, “Create a plan to address opportunities: Plan observation schedules and teaching support, conduct data chats with staff, and/or consider organizing students by using the Instructional Groupings report or the Prerequisites report for mathematics.” The i-Ready Prerequisites Report, generated from students’ i-Ready Diagnostic data, helps teachers identify students’ prerequisite learning needs, automatically groups students with similar needs together, and links to recommended resources for instruction. In this example, teachers are guided to use and analyze student language assessments to design actionable feedback and adjust instruction to meet students’ language and math learning needs while also communicating with other school staff for service to students.
- Comprehension Checks include grade and standard-level assessments to use as appropriate to understand student progress. “Comprehension Checks are digital assessments based on lessons and units in the i-Ready Classroom Mathematics books. They are very similar to the print Lesson Quizzes and Unit Assessments that can be found in the i-Ready Classroom Mathematics Teacher Toolbox. Educators should use either the print quizzes or the Digital Comprehension Checks, but not both. Comprehension Checks give teachers the additional flexibility they need to assess student learning at the pace that best suits their students' needs. You can browse the Comprehension Check assessments available for you to assign to your students, preview them, and manage existing assessments by selecting Assess & Teach on the top navigation. From the menu that displays, select the Assessment category and then under Comprehension Checks, select Math.” The Comprehension Checks include guidance for gathering content data at the lesson and unit level, based on student needs. The class or student data from the Comprehension Checks provide the teacher with content

performance data displayed in a variety of ways but the Checks do not include data specific to students' language development progress.

- Student Dashboard and Diagnostic Assessment, The Family Center resources, i-Ready Data Analysis Guide, provides suggested actions: "Celebrate bright spots and accomplishments: Recognize achievements with students and their families; Acknowledge student achievements in your classwide recognition and incentive system." These resources demonstrate to both students and parents the progress made on digital teacher-assigned lessons, Interactive Practice, digital Comprehension Check assessments (quizzes and unit assessments), and students' personalized instruction path for unfinished learning based on the Diagnostic assessment (My Path). In addition to providing detailed information on student progress and learning in the reports in My Progress, the Family Center provides resources for supporting students at home in multiple languages. This includes using Math Discourse Cards to strengthen students' communication and collaboration skills by talking about math together. The teacher guidance supports communicating assessment data and progress to the student's family, highlighting assets along with areas for growth.

Examples of grade-level guidance include:

Grade 6:

- Unit 1, Lesson 6, Find the Greatest Common Factor and the Least Common Multiple, Lesson Quiz, Short Constructed Response Rubric, includes scoring guidance that could be used to communicate performance data. The scoring descriptors include the accuracy of content solutions but do not include specific language development considerations. For example, "Short Response Scoring Rubric Points and Expectations: 2 - Response has the correct solution(s) and includes well-organized, clear, and concise work demonstrating thorough understanding of mathematical concepts and/or procedures. 1 - Response contains mostly correct solution(s) and shows partial understanding of mathematical concepts and/or procedures. 0 - Response shows no attempt at finding a solution and no effort to demonstrate an understanding of mathematical concepts and/or procedures."
- Unit 2, Lesson 10, Divide Fractions - Full Lesson, Differentiation English Language Learners, Use with Session 4 Apply It, "Levels 3–5: Listening/Speaking, Support students as they engage in partner discussion about Apply It problem 6. Call on a volunteer to read the problem aloud. Have students work individually to complete the chart. Organize students into pairs and ask them to take turns explaining their reasoning using their models or equations. Then have students meet with a different partner and take turns asking each other questions about their charts. Suggest students use the following sentence frames: Why is___ less/greater than 1? Why is ___equal to 1? How did you decide that ___ is ___?" This provides an opportunity for the teacher to facilitate student feedback from peers.
- Unit 7, Lesson 30, Session 3, Develop Using Dot Plots and Histograms to Describe Data Distributions, includes lesson-embedded teacher guidance for discussion and the use of academic language. In Whole Class Discussion, "Call on students to share selected

strategies. Prompt students to justify their thinking with reasons why they believe their statements are true. Guide students to Compare and Connect the representations. If everyone has something to say, use turn and talk before calling on students to share. Ask '*How does the distribution of data help you understand the data*?' Listen for 'The distribution of data shows the differences in the frequency of different times." Develop Academic Language, "Why? Unpack conditional sentences. How? Read the second Analyze It. Help students understand the last sentence. Say, '*Many sentences in math and other subjects tell what will happen if a condition is met.*' Circle the condition in Analyze It. Have students point to the middle of a distribution. Ask, '*How does the data need to be in the middle of the distribution? If this condition is met, how will the distribution be?* Invite students to paraphrase the sentence using when." Examples of quality responses are provided for problems in the Try, Connect and Apply sections of each lesson. These examples show precise academic and mathematical language that students at the grade are expected to develop. There is evidence of guidance and time allocated for how students will incorporate teacher feedback to revise their thinking, talking, and work. Teachers use informal assessment to adjust instruction as needed by adding scaffolds and amplifying language.

Grade 7:

- Unit 1, Lesson 6, Solve Area and Circumference Problems Involving Circles, Lesson Quiz, Problem 3, states, "The circumference of a circle is 14π cm. What is the radius of the circle? Explain your reasoning. (2 points)." Solution states, "7 cm. Possible explanation: The formula for the circumference of a circle is $C = \pi d$, so the diameter of the circle is 14 cm. Since $d = 2r$, $r = 14 \div 2$. The radius is 7 cm." The Short Constructed Response Rubric includes scoring guidance that could be used to communicate performance data. The scoring descriptors include the accuracy of content solutions but do not include specific language development considerations. For example, "Short Response Scoring Rubric Points and Expectations: 2 - Response has the correct solution(s) and includes well-organized, clear, and concise work demonstrating thorough understanding of mathematical concepts and/or procedures. 1 - Response contains mostly correct solution(s) and shows partial understanding of mathematical concepts and/or procedures. 0 - Response shows no attempt at finding a solution and no effort to demonstrate an understanding of mathematical concepts and/or procedures."
- Unit 2, Math In Action, Adding Positive and Negative Numbers, Session 1, Try Another Approach, Solve It, "Problem-Solving Tips, Introduce the Problem-Solving Tips as ideas students may use to explain their thinking. Remind them to also use the Problem-Solving Checklist to make sure their answer is complete. Have students write their own complete solutions on a copy of Activity Sheet *Solution Sheet* or a blank sheet of paper. Reflect, As they work, have students share their thinking with a partner and discuss the Reflect questions. As time permits, have students explain their solutions to the class." Problem-Solving Tips include Key Terms, "addend, inverse operations positive numbers, difference, negative numbers, sum, integers, opposite numbers, zero pairs," and Sentence Starters include, "To find the change in elevation for Stage 1, I will . . . ; I know that the change in elevation for

Stage 1 will be negative because. . . .” These self-assessment tools guide students to construct a complete solution that can be adjusted or confirmed through teacher and/or peer feedback during discussions.

- Unit 7, Lesson 32, Session 1, Explore Theoretical Probability, Differentiation, English Language Learners, Levels 2-4 Writing/Speaking, “Prepare students to respond to Connect It problem 3. Have students tell what they Notice and Wonder about the spinner. Then read the problem. Have students generate words to add to a Co-Constructed Word Bank. Point out *more or less likely* and ask: *What do you need to compare?* Have partners discuss what they can do to compare probabilities. Support students in using multiple verb tenses to express their answers: *The previous spinner had ___ and the probability was ___. The spinner has ___ and the probability is ___. This means ___.”* In this example, the teacher is formatively assessing students’ language and content, providing feedback, and adjusting instruction, aligned to continuous improvement in both oral and written language.

Grade 8:

- Unit 1, Lesson 3, Work with Sequences of Transformations and Congruence, Lesson Quiz, Problem 3 states, “In the diagram, figure *G* is congruent to figure *G’*. What sequence of transformations can be performed to show that the figures are congruent? Show your work (2 points).” Solution states, “Possible answer: Rotate figure *G* 90 degrees counterclockwise around the origin and then translate the image 3 units up.” The Short Constructed Response Rubric includes a scoring guidance that could be used to communicate performance data. The scoring descriptors include the accuracy of content solutions but do not include specific language development considerations. For example, “Short Response Scoring Rubric Points and Expectations: 2 - Response has the correct solution(s) and includes well-organized, clear, and concise work demonstrating thorough understanding of mathematical concepts and/or procedures. 1 - Response contains mostly correct solution(s) and shows partial understanding of mathematical concepts and/or procedures. 0 - Response shows no attempt at finding a solution and no effort to demonstrate an understanding of mathematical concepts and/or procedures.”
- Unit 2, Lesson 6, Session 3, Develop Describing Supplemental Angle Relationships, includes lesson-embedded teacher guidance for discussion. In Whole Class Discussion, “Call on students to share selected strategies. After each strategy, allow individual think time for students to process the ideas. . . Ask, how did the angle relationships used in the different strategies compare? Listen for, The strategies used different pairs of related congruent angles, but all of them used a linear pair, with angle measures that add to 180 degrees. Model it, If students presented these models, have students connect these models to those presented in class. If no students presented at least one of these models, have students first analyze key features of the models, and then connect them…Ask, what connections, if any, do you notice between the strategies used in the two Model Its? Listen for, both strategies use a congruent angle relationship related to parallel lines cut by a transversal. . .For the model about corresponding angles, prompt students to identify what is unique about this

model." Examples of quality responses are provided for problems in the Try, Connect and Apply sections of each lesson. These examples show precise academic and mathematical language that students at the grade are expected to develop. There is evidence of guidance and time allocated for how students will incorporate teacher feedback to revise their thinking, talking, and work. Teachers use informal assessment to adjust instruction as needed by adding scaffolds and amplifying language.

- Unit 7, Lesson 31, Session 1, Explore Two-Way Tables, Differentiation, English Language Learners, Levels 2-4 Reading/Speaking, "To help students write a response to Connect It problem 4, display the Academic Vocabulary. Have students look at the table in problem 3a. Then have them turn to partners to discuss previous and new recommendations. Allow time for students to discuss and write their answers. If students use the present tense to write about new recommendations, encourage them to rewrite using 'would.' Ask: What would you recommend this time?" In this example, the teacher is formatively assessing students' language and content, providing feedback, and adjusting instruction, aligned to continuous improvement in both oral and written language.