

Developing Vocabulary and Supporting English Learners

I-Ready Classroom Mathematics provides a variety of supports to help all students develop their ability to understand and use the academic language of mathematics. While many of the language supports listed are intended for all learners, the program also includes specific supports that address the strengths and needs of students learning English. Learn more about the supports available below.

Engaging All Students and Families

Family Letter (Available in 8+ Languages)

PURPOSE:

Keep families informed and encourage math talk at home using a suggested activity and conversation starters

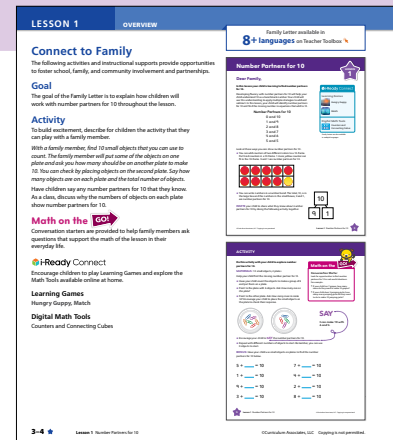
WHEN:

When starting a new lesson

WHERE:

Beginning of Lesson:

- Teacher Toolbox: Instruction & Practice tab
- Teacher's Guide—English
- Student Worktext—English



Connect to Culture

PURPOSE:

Integrate cultural information and leverage the diverse backgrounds and experiences of students through brief activities

WHEN:

During the sessions listed

WHERE:

- Beginning of Lesson: Teacher's Guide
- Teacher Toolbox: Each lesson on the presentation slides (Grades K–1)



STEM Stories (Grades 2–Algebra 1)

PURPOSE:

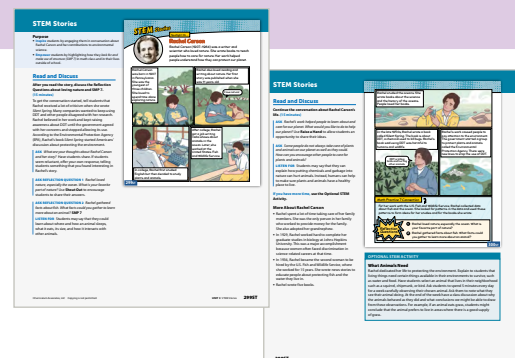
Engage students with stories of people of diverse cultural backgrounds pursuing and achieving success in STEM careers

WHEN:

Anytime during the unit

WHERE:

Beginning of Unit: Teacher's Guide, Student Worktext



Language Routines

PURPOSE:

Use language routines to help students incorporate the specialized language of mathematics

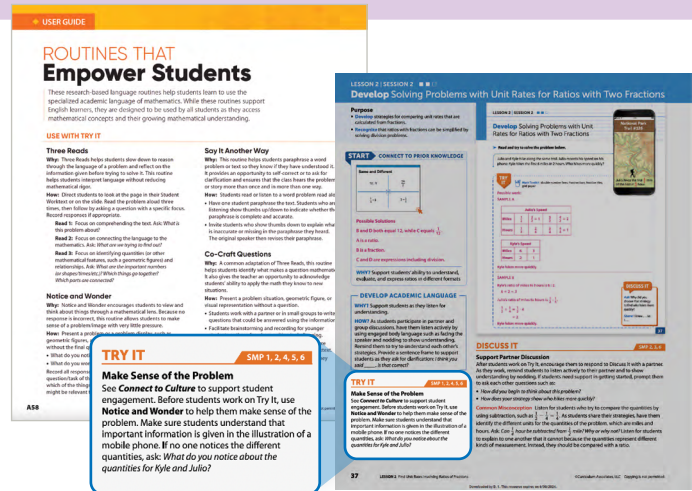
WHEN:

During the Try It portion of the Try–Discuss–Connect framework

WHERE:

Try It in the Try–Discuss–Connect framework: Teacher's Guide

Descriptions in the front matter in the Teacher's Guide and in the Teacher Toolbox in the Program Implementation tab



Protocols for Engagement

PURPOSE:

Increase student participation and inclusion by using these protocols to validate and affirm cultural identities

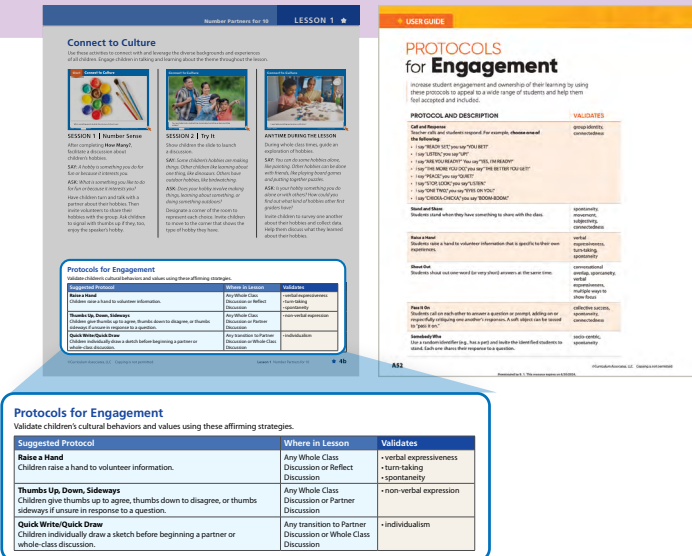
WHEN:

During the sessions listed

WHERE:

Beginning of Lesson (Grades K–8) or Embedded in Sessions (Algebra 1): Teacher's Guide

Descriptions in the User Guide in the Teacher's Guide or in the Teacher Toolbox in the User Guide on the Program Implementation tab



Teacher Moves

PURPOSE:

Give students time and space to make sense of, critique, and develop ideas, as well as structures for attending to and responding to each other's ideas

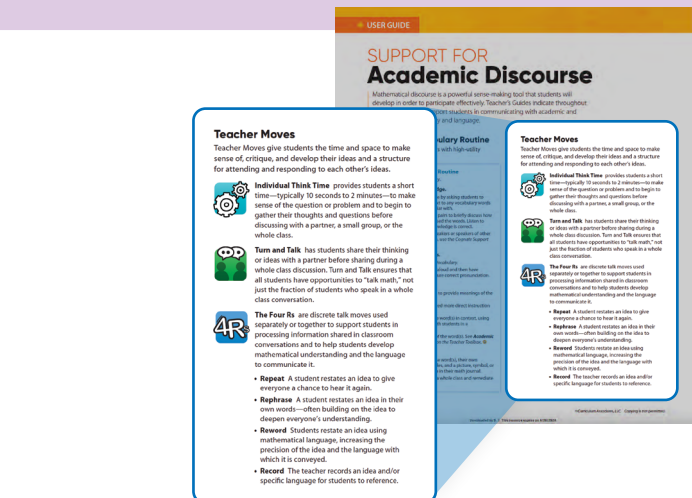
WHEN:

During the session as indicated in the Teacher's Guide

WHERE:

Embedded in Sessions: Teacher's Guide

Descriptions in the User Guide in the Teacher's Guide and in the Teacher Toolbox in the Program Implementation tab



Language Objectives

PURPOSE:

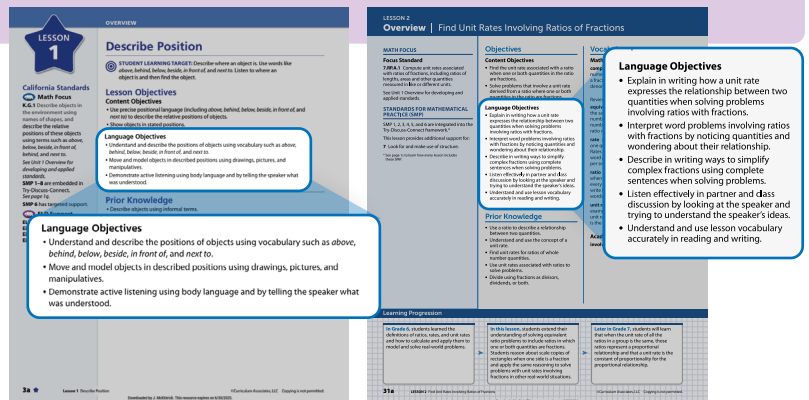
Sets expectations for what students can strive to do with language to demonstrate achievement of the Content Objectives

WHEN:

When planning for the lesson

WHERE:

Lesson Overview: Teacher's Guide



Develop Academic Language

PURPOSE:

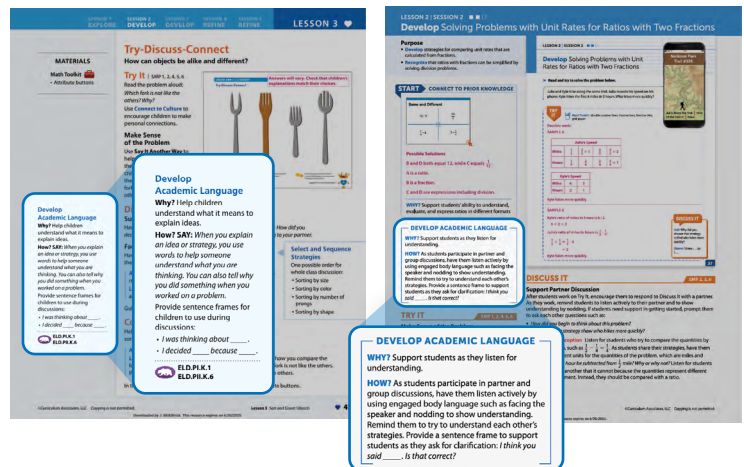
Focuses on language at the word/phrase, sentence, or discourse level to support students in the development of the language needed to access and communicate about mathematics

WHEN:

During the Develop sessions

WHERE:

Develop Sessions for Grades K–8 and Session Overview for Algebra 1: Teacher's Guide



Discourse Cards or Discourse Cube

PURPOSE:

Questions and sentence stems to use to support conversations during discussion time

WHEN:

Anytime students are discussing

WHERE:

Physical Cards or Teacher Toolbox: Program Implementation tab



Vocabulary Support

Use these resources with all students.

Beginning of Unit Vocabulary: Build Your Vocabulary (K–5 and A1), Prepare for Unit (Grades 6–8)

PURPOSE:

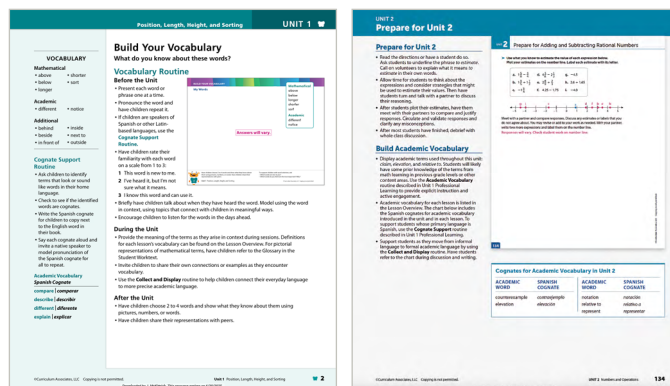
Use the Academic Vocabulary Routine and the Cognate Support Routine to help students build on prior knowledge of both math terms and academic vocabulary, then have students complete an activity to use the words in context

WHEN:

Before starting a new unit

WHERE:

Beginning of Unit: Teacher's Guide and Student Worktext



Vocabulary Review (Grades 2–Algebra 1)

PURPOSE:

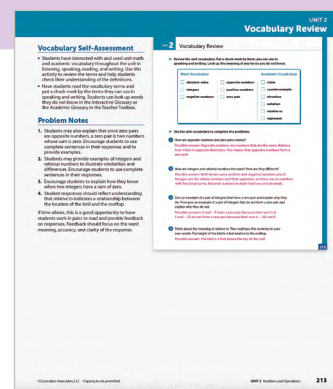
Guide students to reflect on the math terms and academic vocabulary learned during the unit

WHEN:

Before the unit assessment

WHERE:

End of Unit: Teacher's Guide, Student Worktext



Vocabulary Development (Grades 2–Algebra 1)

PURPOSE:

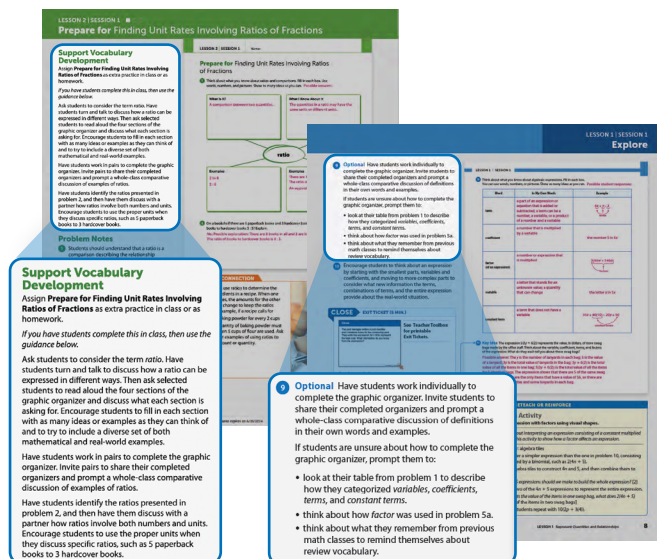
Use graphic organizers to focus on key math terms in the lesson to support language development

WHEN:

During the Explore sessions

WHERE:

Explore Session Practice Pages for Grades K–8 and at the end of the Connect It problems for Algebra 1: Teacher's Guide, Student Worktext



Sentence Starters and Frames

PURPOSE:

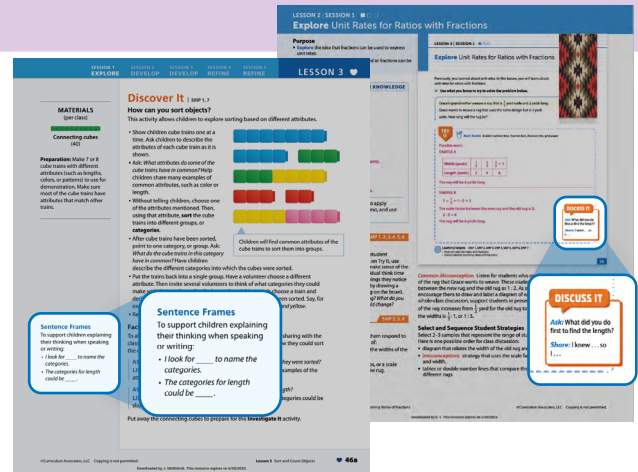
Use the questions and sentence starters to scaffold students' production of complete sentences using mathematics language with a partner

WHEN:

During the Discuss It portion of the Try–Discuss–Connect framework

WHERE:

Discuss It in the Try–Discuss–Connect framework:
Teacher's Guide, Student Worktext



Academic Vocabulary Glossary

PURPOSE:

Use to model the academic vocabulary words in context and in a complete sentence

WHEN:

Anytime as needed

WHERE:

Teacher Toolbox: Program Implementation tab

Academic Term	Definition	Sample Sentence
accurate	free from errors.	An accurate answer is true and correct.
actual	real and existing, not a model or copy.	Flour plans and maps are drawn smaller than their actual size.
additional	more than you already have.	The item costs \$18, plus an additional shipping fee of \$2.50.
algebraic	Involving variables or the rules of algebra.	Use an algebraic method with the variable to represent the number of tickets.
analyze	to examine details and patterns in order to draw conclusions or make estimations.	A table or a graph can make it easier to analyze the relationship between two variables.
approach	to begin to think about.	If you feel stuck, approach the problem in a different way.
approximate (verb)	almost exact.	We used an estimate for the side length of a square to find an approximate perimeter.
approximate (adj)	to find a close position or almost exact value of something.	You can approximate an answer by estimating.
argue	to give reasons that a statement or claim is true or false.	The music teacher will argue that all students should have at least one music class each week.
argument	a statement or claim that something is true or false.	Construct an argument to persuade your friend to eat more vegetables.
at least	the minimum amount; greater than or equal to a number.	People ages 6 through 17 should get at least 60 minutes of exercise every day.
at most	the maximum amount; less than or equal to a number.	The van holds 18 passengers. At most , which is not enough room for 20 people.
at random	in a way that does not follow a particular rule or pattern.	The teacher selected the winning ticket at random from a box.

English Learner Support

Use these resources with students who are learning English.

Professional Learning

PURPOSE:

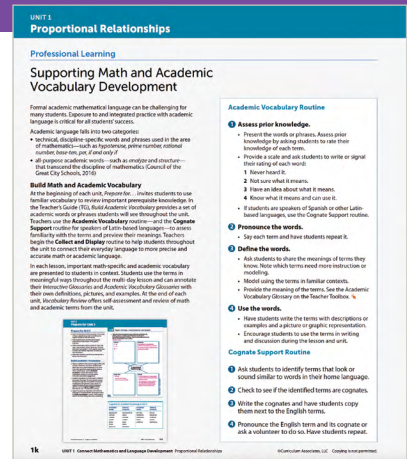
Provides information and guidance related to engaging all students, supporting English learners, and developing vocabulary

WHEN:

When planning for the unit

WHERE:

Beginning of Unit: Teacher's Guide



Connect Mathematics with Language Development

PURPOSE:

Differentiate by understanding what students at different levels of language proficiency can typically do in relation to one math standard addressed in the unit

WHEN:

When planning for the unit

WHERE:

Beginning of Unit: Teacher's Guide

UNIT 1 Connect Mathematics with Language Development				
Language Expectations				
The chart below shows examples of what English learners at different levels of English language proficiency can do in connection with one of the Common Core State Standards (CCSS) addressed in the unit. As you plan for the unit, use these examples of language expectations to help you differentiate instruction to meet the needs of English learners.				
Standard 1.MA.2.A Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin.				
LEVEL	BEGINNINGS	INTERMEDIATE	ADVANCED/ADVANCED-HIGH	LEVEL 5
LISTENING	Test whether two quantities are in a proportional relationship by following one step out loud with teacher modeling and illustrated examples.	Test whether two quantities are in a proportional relationship by following multi-step out loud with teacher modeling and illustrated examples.	Test whether two quantities are in a proportional relationship by following multi-step out loud with teacher modeling and illustrated examples.	Test whether two quantities are in a proportional relationship by following multi-step out loud with teacher modeling and illustrated examples.
READING	Interpret word problems about proportional relationships by identifying with peer support, the two key quantities and then plotting the relationship between the quantities on a graph using grid lines and graph templates.	Interpret word problems about proportional relationships by identifying with peer support, the two key quantities and then plotting the relationship between the quantities on a graph using grid lines and graph templates.	Interpret word problems about proportional relationships by identifying with peer support, the two key quantities and then plotting the relationship between the quantities on a graph using grid lines and graph templates.	Interpret word problems about proportional relationships by identifying with peer support, the two key quantities and then plotting the relationship between the quantities on a graph using grid lines and graph templates.
WRITING	Label graphs to justify whether two quantities are in a proportional relationship by explaining to a partner the relationship between the quantities on a graph using grid lines and graph templates.	Label and describe graphs to determine whether two quantities are in a proportional relationship by explaining to a partner the relationship between the quantities on a graph using grid lines and graph templates.	Compose written justifications of whether two quantities are in a proportional relationship by explaining to a partner the relationship between the quantities on a graph using grid lines and graph templates.	Compose written justifications of whether two quantities are in a proportional relationship by explaining to a partner the relationship between the quantities on a graph using grid lines and graph templates.

Connect to Language Development (Grades K–8)/Language Support (Algebra 1)

PURPOSE:

Scaffold language and provide access to support participation in understanding the mathematics

WHEN:

During the session

WHERE:

End of Session for Grades K–8 (in preparation for the next session) or Session Overview for Algebra 1: Teacher's Guide

LESSON 1

SESSION 1 EXPLORE

START

Number Sense

How Many?

How many can you count? How many do you see?

- Encourage students to take time and look at the picture.
- Have students say and talk about what items they counted and how many they saw.
- Count and ask for a variety of reasons for whole class sharing.

Facilitate Whole Class Discussion

- What things did you and your partner count?
- How many did you see?
- Are there more things in pairs? How do you know?

Use **Connect to Culture** to encourage children to make personal connections.

DIFFERENTIATION | English Learners Use with Investigate It

Levels 1–3 Speaking/Listening	Levels 2–4 Speaking/Listening	Levels 3–5 Speaking/Listening
Support partners in using their shared home language and English as they work on the activity. After a few minutes, have partners begin a Co-Constructed Word Bank with helpful terms and phrases in English and their home languages. If needed, add and review count, fill, put, 10-frame, triangle, and square. Help children use words from the bank while collaborating: - Let's put ____. - Let's count ____.	Support partners in using their shared home language and English as they work on the activity. After a few minutes, have partners begin a Co-Constructed Word Bank with helpful terms and phrases in English and their home languages. If needed, add and review count, fill, put, 10-frame, triangle, and square. Help children use words from the bank while collaborating: - Let's put ____. - Let's count ____.	Support partners in using their shared home language and English as they work on the activity. After a few minutes, have partners begin a Co-Constructed Word Bank with helpful terms and phrases in English and their home languages. If needed, add and review count, fill, put, 10-frame, triangle, and square. Help children use words from the bank while collaborating: - Let's put ____. - Let's count ____.

Multilingual Glossary of Math Terms (Available in Multiple Languages)

PURPOSE:

Use to support students in their home language to reinforce the meaning of math terms

WHEN:

Anytime as needed

WHERE:

Teacher Toolbox: Program Implementation tab

Glossary/Glosario		
English	Español	Example/Ejemplo
acute angle an angle that measures more than 0° but less than 90°	ángulo agudo ángulo que mide más de 0° pero menos de 90°	
acute triangle a triangle that has three acute angles	triángulo acutángulo triángulo que tiene tres ángulos agudos	
addend a number being added	sumando número que se suma	$24 + 35 = 59$ addends
algorithm a set of routine steps used to solve problems	algoritmo conjunto de pasos que se siguen rutinariamente para resolver problemas	$\begin{array}{r} 26 \\ \times 14 \\ \hline 104 \\ + 260 \\ \hline 364 \end{array}$
am the time from midnight until before noon	a. m. el tiempo que transcurre desde la medianoche hasta el mediodía	
angle a geometric shape formed by two rays, lines, or line segments that meet at a common point	ángulo figura geométrica formada por dos semirrectas, rectas, o segmentos de recta que se encuentran en un punto	