

BUILD Big Ideas

Classroom Mathematics California was built on the belief that mathematical ideas should be explored in an interconnected manner. This is apparent with the multi-day lesson structure of the program, which addresses multiple standards across Big Ideas. This structure ensures that mathematical concepts, including Big Ideas, are connected within and across lessons, units, and the program as a whole.

Begin and End Every Unit with Big Ideas

Engage students with Big Ideas in Unit Openers and end-of-unit Self Reflections.

Introduce Big Ideas and Key Understandings as part of establishing learning goals, and build context for learning from the first minutes of the unit.

Revisit and reflect on Big Ideas at the end of each unit to make connections across the lessons and units.

UNIT 2
Multiplication and Division

Unit Overview

This unit introduces students to multiplication and division. Students preview the skills they will be learning in this unit and assess what they know and do not know about them. Students record their progress after completing each lesson and reflect on their learning at the end of the unit.

California Big Ideas

Unit 2 Big Ideas and Key Understandings:

- **Square Tiles** Arrays of square tiles or other objects can model multiplication. (Lessons 6–7)
- **Number Flexibility to 100 for All Four Operations** Flexibility with numbers and operations supports strategies for multiplying and dividing. (Lessons 4–13)

Use the **Big Ideas Organizer** pages with students.

Support Positive Learning Habits

At the beginning of the unit, share the individual and social responsibility goal **Persevere**. At the end of the unit, support growth mindset by having students discuss the prompts and review the skills on the **Self Reflection** page.

Academic Language Focus

The last Unit Skill describes the academic language focus for the unit.

Use the **Academic Language Focus Resources** to model, practice, and formatively assess students' progress at the end of lessons where the focus language skill is listed.

SELF CHECK

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

I can...	Before	After
Explain multiplication using equal groups and arrays.	☐	☐
Break apart numbers to make multiplying easier, for example: $3 \times 8 = (3 \times 4) + (3 \times 4)$.	☐	☐
Use order and grouping to make multiplying easier, for example: $2 \times 6 \times 5 = 6 \times (2 \times 5)$.	☐	☐
Use place value to multiply, for example: $3 \times 40 = 3 \times 4 \times 10$.	☐	☐
Explain division using equal groups and arrays.	☐	☐
Understand how multiplication and division are related.	☐	☐
Use multiplication and division facts up through the facts for 10.	☐	☐
Find the rule for a pattern and explain it.	☐	☐
Explain problem-solving strategies by telling what you did in each step and why you decided to do it.	☐	☐

Unit Skills

Unit Skills	Lesson
Explain multiplication using equal groups and arrays.	4, 5, 6, 7
Break apart numbers to make multiplying easier, for example: $3 \times 8 = (3 \times 4) + (3 \times 4)$.	6, 7
Use order and grouping to make multiplying easier, for example: $2 \times 6 \times 5 = 6 \times (2 \times 5)$.	8
Use place value to multiply, for example: $3 \times 40 = 3 \times 4 \times 10$.	9
Explain division using equal groups and arrays.	10
Understand how multiplication and division are related.	11
Use multiplication and division facts up through the facts for 10.	12
Find the rule for a pattern and explain it.	13
Explain problem-solving strategies by telling what you did in each step and why you decided to do it.	5, 9, 12

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UNIT 2
Self Reflection

Support Positive Learning Habits

Growth Mindset

As students review and reflect, encourage them to revisit the work they did in each lesson in order to reflect on their learning, celebrate their growth, and set new goals.

- Have students revisit the skills on the **Self Reflection** page, review the Key Understandings on the **Big Ideas Organizer**, and respond to the Self Reflection prompts.
- Remind students that the list of skills on the Self Reflection page is the same list they saw on the **Self Check** page at the beginning of the unit.
- Discuss students' responses to the Self Reflection prompts as a class.
- Reinforce a growth mindset by telling students that they will continue to refine their understanding and build on these skills and concepts in future lessons and grade levels.

Individual and Social Responsibility

ASK We have been talking about making choices that help you learn math. What is going well for you as a math learner?

LISTEN FOR Students may describe managing their own learning by asking questions when they are confused and persisting with challenging work.

ASK What is going well for you when you work with other students to learn math?

LISTEN FOR Students may describe working well with others by taking turns, listening carefully, and helping each other.

UNIT 2
Self Reflection

In this unit you learned to...

Skill	Lesson
Explain multiplication using equal groups and arrays.	4, 5, 6, 7
Break apart numbers to make multiplying easier, for example: $3 \times 8 = (3 \times 4) + (3 \times 4)$.	6, 7
Use order and grouping to make multiplying easier, for example: $2 \times 6 \times 5 = 6 \times (2 \times 5)$.	8
Use place value to multiply, for example: $3 \times 40 = 3 \times 4 \times 10$.	9
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Understand how multiplication and division are related.	11
Use multiplication and division facts up through the facts for 10.	12
Find the rule for a pattern and explain it.	13
Explain problem-solving strategies by telling what you did in each step and why you decided to do it.	5, 9, 12

Think about what you learned.

Use words, numbers, and drawings.

- I am proud that I can...
- I worked hardest to learn how to...
- A question I still have is...

Big Idea Reflections

MAKE CONNECTIONS

Thinking about Big Ideas helps students organize their knowledge and connect mathematical understandings.

- Have students return to the **Big Ideas Organizer** to review what they recorded. Revisit class anchor charts.
- Ask questions that support looking at one Big Idea across lessons. For example, ask: *How did you use Number Flexibility to 100 for All Four Operations to help you understand Lessons 5–9 and Lesson 12?*
- Ask questions that support making connections among Big Ideas. For example, ask: *How did working with Square Tiles help you increase your Number Flexibility to 100 for All Four Operations?*

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Go to Success Central for implementation support for Big Ideas.

Big Ideas Organizer

The Big Ideas Organizer immediately follows the Unit Opener page. At the end of every strategy lesson, facilitate student exploration of the Key Understanding of the lesson in support of making Big Ideas Connections.

UNIT 2
Big Ideas Organizer

At the end of lessons, use drawings, words, and numbers to show your thinking.

Squares Tiles

Key Understanding Arrays of square tiles or other objects can model multiplication.

Lesson 6

Lesson 7

Big Ideas are identified and aligned for every unit and lesson throughout the program.

Number Flexibility to 100 for All Four Operations

Key Understanding Flexibility with numbers and operations supports strategies for multiplying and dividing.

Lesson 5

Lesson 6

Lesson 7

Lesson 8

Lesson 9

Lesson 12

Key Understandings describe the ways the Big Ideas relate to the specific content of the unit.

Students use the Big Ideas Organizer to create a record of their understanding that builds across lessons and units.

Making Connections

Presentation slides provide tailored prompts to focus student discussions on making connections between the Key Understanding and their work in the lesson.

The Big Ideas Connections table in the Teacher’s Guide offers examples of the ways Key Understandings can be applied.

Big Idea

Number Flexibility to 100 for All Four Operations

Flexibility with numbers and operations supports strategies for multiplying and dividing.

LOOK BACK Find a time you changed the order or grouping of factors when solving a multiplication problem.

SHARE AND DISCUSS How can changing the order or grouping of factors help you multiply?

Big Ideas Connections

Big Idea & Key Understanding	Lesson	End of Lesson Connection
Number Flexibility to 100 for All Four Operations Flexibility with numbers and operations supports strategies for multiplying and dividing.	5	You can think about multiplication as equal groups, skip counting, or repeated addition. Knowing different ways to multiply means you can use the way that makes sense to you for a problem.
	6	Breaking a multiplication problem apart lets you use multiplication facts you know to find a product. Finding different ways to break the problem apart helps you be flexible.
	7	Breaking a multiplication problem apart in different ways helps you see different multiplication facts you can use.
	8	Thinking flexibly about how numbers can be grouped and ordered can help make finding products easier. It can also help you recognize when different problems have the same answer.
	9	You can think of a multiple of 10 as a one-digit number times 10. Then you can multiply the two one-digit numbers to know how many tens there are.
	12	Division is the opposite of multiplication. That means you can use multiplication facts to solve division problems.