



The Common Core State Standards for Mathematics Grades 3–5

California Teachers Association
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CALIFORNIA DEPARTMENT OF EDUCATION
Tom Torlakson, State Superintendent of Public Instruction





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Common Core State Standards for Mathematics Grades 3–5

Overview

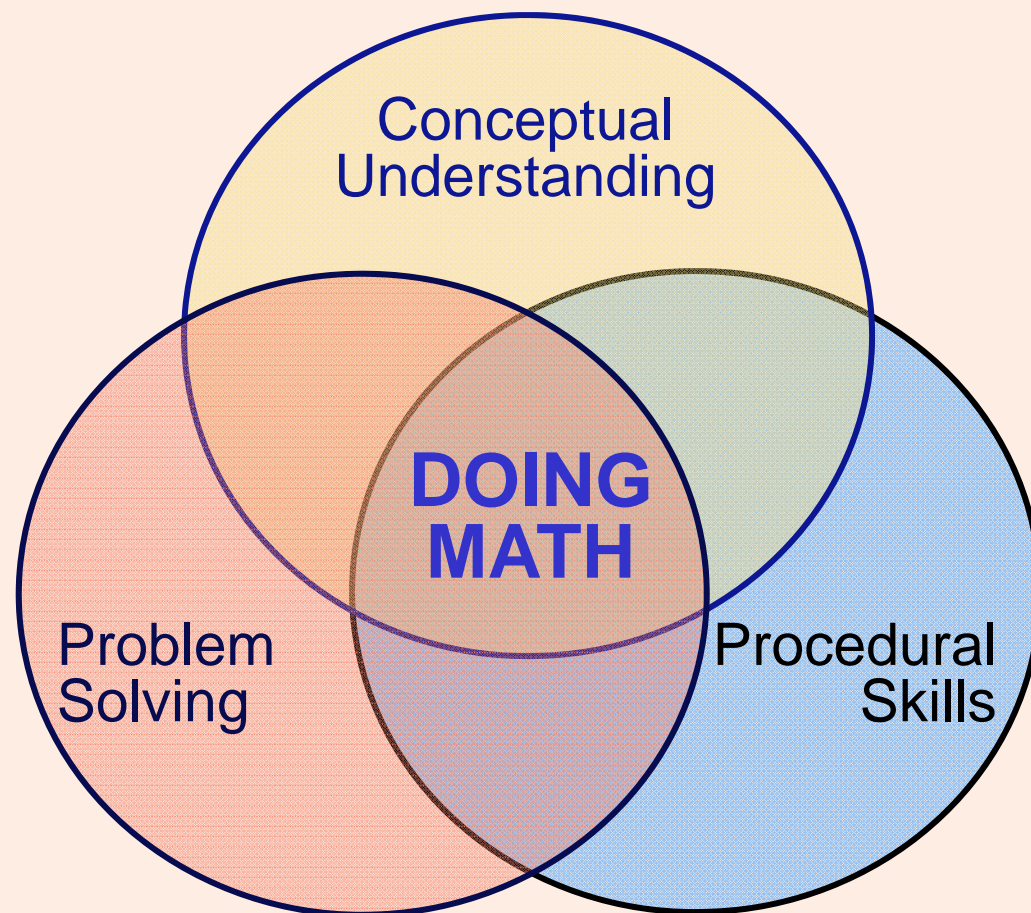
- Standards for Mathematical Practice
What and how?
- Standards for Mathematical Content
What and how?
- Transition to the Common Core
- Common Core Resources
- Implications for Your Work
- Questions?



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Mathematical Proficiency

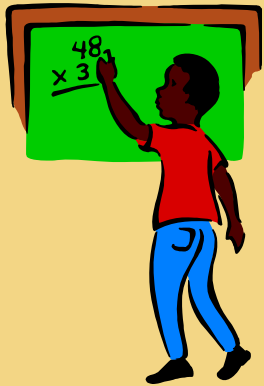
as defined by the California Framework (2006)



Problem Solving



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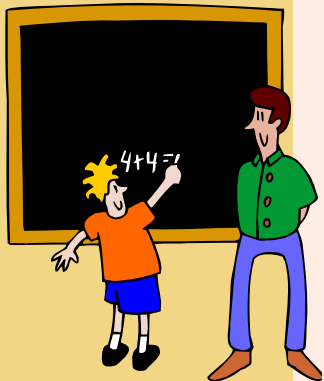


★ **Solve two-step word problems** using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. (3.OA.8)

★ **Solve real world problems** involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem. (5.NF.6)



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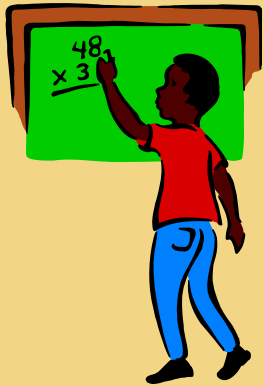
Develop Conceptual Understandings

- ☆ **Understand** two fractions as equivalent (equal) if they are the same size, or the same point on a number line. Recognize that equivalencies are only valid when the two fractions refer to the same whole.
(3.NF.3a)
- ☆ Add, subtract, multiply, and divide decimals to hundredths, **using concrete models or drawings and strategies** based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and **explain the reasoning** used.
(5.NBT.7)

Emphasis on Fluency



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☆ **Fluently** add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. (3.NBT.2)

☆ **Fluently** add and subtract multi-digit whole numbers using the standard algorithm. (4.NBT.4)



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Common Core State Standards for Mathematics

Two Types of Standards:

- **Mathematical Practices**
(recurring throughout the grades)
- **Mathematical Content**
(different at each grade level)



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Standards for Mathematical Practice

Describe ways students **engage** with the subject matter throughout the elementary, middle and high school years

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.



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Reasoning and explaining



Modeling and using tools



Seeing structure and generalizing



Overarching habits of mind of a productive
mathematical thinker.

Standards for Mathematical Practice

1. Make sense of problems and persevere in solving them

6. Attend to precision

2. Reason abstractly and quantitatively

3. Construct viable arguments and critique the reasoning of others

4. Model with mathematics

5. Use appropriate tools strategically

7. Look for and make use of structure.

8. Look for and express regularity in repeated reasoning.



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Standards for Mathematical Practice

Understanding expectations provide **connections** between the Mathematical Content Standards and the Mathematical Practices Standards

- **Understand** two fractions as equivalent (equal) if they are the same size, or the same point on a number line. Recognize that equivalencies are only valid when the two fractions refer to the same whole. (3.NF.3a)
- **Understand** addition and subtraction of fractions as joining and separating parts referring to the same whole. (4.NF.3a)



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Standards for Mathematical Practice

“The Standards for Mathematical Practices describe...
expertise that mathematics educators at all levels
should seek to develop in their students.”

Activity: Read the Standards for
Mathematical Practice (pp. 1–2) and then
discuss with your neighbor:

- Which standards might be familiar or unfamiliar to teachers? Why?
- Do you currently develop similar mathematical expertise in your students? How?
- How might these standards impact your teaching?



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CCSS: Overview

Grade 3 Overview

Operations and Algebraic Thinking

- Represent and solve problems involving multiplication and division.
- Understand properties of multiplication and the relationship between multiplication and division.
- Multiply and divide within 100.
- Solve problems involving the four operations, and identify and explain patterns in arithmetic.

Number and Operations in Base Ten

- Use place value understanding and properties of operations to perform multi-digit arithmetic.

Number and Operations—Fractions

- Develop understanding of fractions as numbers.

Measurement and Data

- Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.
- Represent and interpret data.
- Geometric measurement: understand concepts of area and relate area to multiplication and to addition.
- Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.

Geometry

- Reason with shapes and their attributes.

Mathematical Practices

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.



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Domains
Clusters

Standards

Standards for Mathematical Content

How the grade level standards are organized

Operations and Algebraic Thinking

3.OA

Represent and solve problems involving multiplication and division.

1. Interpret products of whole numbers, e.g., interpret 5×7 as the total number of objects in 5 groups of 7 objects each, **or 7 groups of 5 objects each**. For example, describe a context in which a total number of objects can be expressed as 5×7 .
2. Interpret whole-number quotients of whole numbers, e.g., interpret $56 \div 8$ as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. For example, describe a context in which a number of shares or a number of groups can be expressed as $56 \div 8$.
3. Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.¹
4. Determine the unknown whole number in a multiplication or division equation relating three whole numbers. For example, determine the unknown number that makes the equation true in each of the equations $8 \times ? = 48$, $5 = \square \div 3$, $6 \times 6 = ?$.

Understand properties of multiplication and the relationship between multiplication and division.

5. Apply properties of operations as strategies to multiply and divide.² Examples: If $6 \times 4 = 24$ is known, then $4 \times 6 = 24$ is also known. (Commutative property of multiplication.) $3 \times 5 \times 2$ can be found by $3 \times 5 = 15$, then $15 \times 2 = 30$, or by $5 \times 2 = 10$, then $3 \times 10 = 30$. (Associative property of multiplication.) Knowing that $8 \times 5 = 40$ and $8 \times 2 = 16$, one can find 8×7 as $8 \times (5 + 2) = (8 \times 5) + (8 \times 2) = 40 + 16 = 56$. (Distributive property.)
6. Understand division as an unknown-factor problem. For example, find $32 \div 8$ by finding the number that makes 32 when multiplied by 8.

Multiply and divide within 100.

7. Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that $8 \times 5 = 40$, one knows $40 \div 5 = 8$) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.



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CCSS Domains K–5

Domain	K	1	2	3	4	5
Counting and Cardinality (CC)	✓					
Operations and Algebraic Thinking (OA)	✓	✓	✓	✓	✓	✓
Number and Operations in Base Ten (NBT)	✓	✓	✓	✓	✓	✓
Measurement and Data (MD)	✓	✓	✓	✓	✓	✓
Geometry (G)	✓	✓	✓	✓	✓	✓
Number and Operations – Fractions (NF)				✓	✓	✓



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CCSS Domains 6–8

Domain	6	7	8
Ratios and Proportional Relationships (RP)	✓	✓	
The Number System (NS)	✓	✓	✓
Expressions and Equations (EE)	✓	✓	✓
Geometry (G)	✓	✓	✓
Statistics and Probability (SP)	✓	✓	✓
Functions (F)			✓



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California Additions

Example:

(3.OA.1) Interpret products of whole numbers, e.g., interpret 5×7 as the total number of objects in 5 groups of 7 objects each, **or 7 groups of 5 objects each**. *For example, describe a context in which a total number of objects can be expressed as 5×7 .*



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California Additions

Look through the next few pages of your standards document (through page 23). Locate and read other examples of “California Additions” from grades 3–5.

Share with a neighbor how these additions might help to maintain the rigor of the 1997 California standards at these grades?



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CCSS Grades K–2

The Common Core State Standards
focus on whole number arithmetic

K	1	2
Count to 100, write numbers (to 20)	Count, read and write numbers (to 120)	Count, read and write numbers (to 1,000)
Place value to 19	Place value to 100	Place value to 1,000
Fluently add and subtract (within 5)	Fluently add and subtract (within 10)	Fluently add and subtract (within 100)
Represent addition and subtraction (within 10)	Add (within 100) Subtract multiples of 10 (range 10-90)	Add and subtract (within 1,000) Demonstrate multiplication and division



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What Third Grade Students Should Know

- Understand place value (within 1000)
- Add and subtract (within 1000) and fluently add and subtract (within 100)
- Know from memory all sums of two one-digit numbers
- Demonstrate multiplication (as repeated addition) and division (as repeated subtraction)
- Measure lengths using tools
- Recognize shapes by various attributes and partition rectangles and circles



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CCSS Grades 3–5

Focus on whole number arithmetic (addition, subtraction, multiplication and division), fractions, and decimals

Examples of Topics	Gr.
<ul style="list-style-type: none">• Fluently add and subtract within 1000; multiply and divide within 100• Introduce fractions as a number on a number line	3
<ul style="list-style-type: none">• Fluently add and subtract multi-digit numbers (using the standard algorithms)• Extend multiplication and division to four digit numbers• Add and subtract fractions (with like denominators)• Multiply a fraction by a whole number• Introduce decimals	4
<ul style="list-style-type: none">• Fluently multiply multi-digit numbers (using the standard algorithm)• Add and subtract fractions (with unlike denominators); multiply fractions• Divide unit fractions by whole numbers and whole numbers by unit fractions• Add, subtract, multiply and divide decimals (to hundredths)	5



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CCSS: Multiplication and Division

ACTIVITY

Read standards 3.OA and NBT and 4.OA and NBT (pp. 13–14 and 17).

Then discuss at your table:

- What strategies or models will students use to multiply and divide? How does this approach help students understand the content?
- What are some examples of connections with the Mathematical Practices Standards?
- How might these standards be familiar or unfamiliar to teachers?



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CCSS: Multiplication and Division

Watch two videos on how to multiply and divide:

http://www.mathtv.com/videos_by_topic#

(Source: MathTV.com)

Then discuss at your table:

- Do you think these videos would help your students multiply and divide? Explain.
- How might you change the videos to include some strategies (such as place value understanding, the relationship between addition and subtraction, and properties of operations) to help students understand multiplication and division? Refer to standards 3.OA.5–7, 3.NBT.3 and 4.NBT.5–6.



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How are the 1997 CA Standards and the Common Core State Standards similar or different?

ACTIVITY

- Read the selection of multiplication and division standards.
- At your table discuss how the CCSS might affect the way you teach?

Implementing the Common Core State Standards (CCSS):
Instructional Considerations Activity Gr. 3-5 (Multiply and Divide)

1997 CALIFORNIA CONTENT STANDARD	COMMON CORE STATE STANDARD
<p>CA.2.NS.3.1 Use repeated addition, arrays, and counting by multiples to do multiplication.</p> <p>CA.2.NS.3.2 Use repeated subtraction, equal sharing, and forming equal groups with remainders to do division.</p> <p>CA.2.AF.1.1 Use the commutative and associative rules to simplify mental calculations and to check results.</p> <p>CA.3.NS.2.3 Use the inverse relationship of multiplication and division to compute and check results.</p> <p>CA.3.NS.2.4 Solve simple problems involving multiplication of multidigit numbers by one-digit numbers ($3,671 \times 3 = \underline{\quad}$).</p> <p>CA.3.NS.2.5 Solve division problems in which a multidigit number is evenly divided by a one-digit number ($135 \div 5 = \underline{\quad}$).</p> <p>CA.3.AF.1.5 Recognize and use the commutative and associative properties of multiplication (e.g., if $5 \times 7 = 35$, then what is 7×5? and if $5 \times 7 \times 3 = 105$, then what is $7 \times 3 \times 5$?).</p> <p>CA.4.NS.3.2 Demonstrate an understanding of, and the ability to use, standard algorithms for</p>	<p>Work with equal groups of objects to gain foundations for multiplication.</p> <p>2.OA.5. Use repeated addition and counting by multiples to demonstrate multiplication.</p> <p>2.OA.6 Use repeated subtraction and equal group sharing to demonstrate division.</p> <p>Represent and solve problems involving multiplication and division.</p> <p>3.OA.1. Interpret products of whole numbers, e.g., interpret 5×7 as the total number of objects in 5 groups of 7 objects each, or 7 groups of 5 objects each. For example, describe a context in which a total number of objects can be expressed as 5×7.</p> <p>3.OA.2. Interpret whole-number quotients of whole numbers, e.g., interpret $56 \div 8$ as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. For example, describe a context in which a number of shares or a number of groups can be expressed as $56 \div 8$.</p> <p>3.OA.3 Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.</p> <p>3.OA.5. Apply properties of operations as strategies to multiply and divide. Examples: If $6 \times 4 = 24$ is known, then $4 \times 6 = 24$ is also known. (Commutative property of multiplication.) $3 \times 5 \times 2$ can be found by $3 \times 5 = 15$, then $15 \times 2 = 30$, or by $5 \times 2 = 10$, then $3 \times 10 = 30$. (Associative property of multiplication.) Knowing that $8 \times 5 = 40$ and $8 \times 2 = 16$, one can find 8×7 as $8 \times (5 + 2) = (8 \times 5) + (8 \times 2) = 40 + 16 = 56$. (Distributive property.)</p> <p>3.OA.6. Understand division as an unknown-factor problem. For example, find $32 \div 8$ by finding the number that makes 32 when multiplied by 8.</p> <p>Multiply and divide within 100.</p> <p>3.OA.7. Fluently multiply and divide within 100, using strategies such as the relationship between</p>

CCSS: Multiplication and Division

TABLE 2. Common multiplication and division situations.⁷

	Unknown Product	Group Size Unknown ("How many in each group?" Division)	Number of Groups Unknown ("How many groups?" Division)
	$3 \times 6 = ?$	$3 \times ? = 18$, and $18 \div 3 = ?$	$? \times 6 = 18$, and $18 \div 6 = ?$
Equal Groups	There are 3 bags with 6 plums in each bag. How many plums are there in all? <i>Measurement example.</i> You need 3 lengths of string, each 6 inches long. How much string will you need altogether?	If 18 plums are shared equally into 3 bags, then how many plums will be in each bag? <i>Measurement example.</i> You have 18 inches of string, which you will cut into 3 equal pieces. How long will each piece of string be?	If 18 plums are to be packed 6 to a bag, then how many bags are needed? <i>Measurement example.</i> You have 18 inches of string, which you will cut into pieces that are 6 inches long. How many pieces of string will you have?
Arrays,⁴ Area⁵	There are 3 rows of apples with 6 apples in each row. How many apples are there? <i>Area example.</i> What is the area of a 3 cm by 6 cm rectangle?	If 18 apples are arranged into 3 equal rows, how many apples will be in each row? <i>Area example.</i> A rectangle has area 18 square centimeters. If one side is 3 cm long, how long is a side next to it?	If 18 apples are arranged into equal rows of 6 apples, how many rows will there be? <i>Area example.</i> A rectangle has area 18 square centimeters. If one side is 6 cm long, how long is a side next to it?
Compare	A blue hat costs \$6. A red hat costs 3 times as much as the blue hat. How much does the red hat cost? <i>Measurement example.</i> A rubber band is 6 cm long. How long will the rubber band be when it is stretched to be 3 times as long?	A red hat costs \$18 and that is 3 times as much as a blue hat costs. How much does a blue hat cost? <i>Measurement example.</i> A rubber band is stretched to be 18 cm long and that is 3 times as long as it was at first. How long was the rubber band at first?	A red hat costs \$18 and a blue hat costs \$6. How many times as much does the red hat cost as the blue hat? <i>Measurement example.</i> A rubber band was 6 cm long at first. Now it is stretched to be 18 cm long. How many times as long is the rubber band now as it was at first?
General	$a \times b = ?$	$a \times ? = p$, and $p \div a = ?$	$? \times b = p$, and $p \div b = ?$

Source: http://www.corestandards.org/assets/CCSSI_Math%20Standards.pdf

Table 3: Multiplication and division situations

	$A \times B = \square$	$A \times \square = C$ and $C \div A = \square$	$\square \times B = C$ and $C \div B = \square$
Equal Groups of Objects	<p>Unknown Product</p> <p>There are A bags with B plums in each bag. How many plums are there in all?</p>	<p>Group Size Unknown</p> <p>If C plums are shared equally into A bags, then how many plums will be in each bag?</p>	<p>Number of Groups Unknown</p> <p>If C plums are to be packed B to a bag, then how many bags are needed?</p>
Arrays of Objects	<p>Unknown Product</p> <p>There are A rows of apples with B apples in each row. How many apples are there?</p>	<p><i>Equal groups language</i></p> <p>Unknown Factor</p> <p>If C apples are arranged into A equal rows, how many apples will be in each row?</p>	<p>Unknown Factor</p> <p>If C apples are arranged into equal rows of B apples, how many rows will there be?</p>
	<p>Unknown Product</p> <p>The apples in the grocery window are in A rows and B columns. How many apples are there?</p>	<p><i>Row and column language</i></p> <p>Unknown Factor</p> <p>If C apples are arranged into an array with A rows, how many columns of apples are there?</p>	<p>Unknown Factor</p> <p>If C apples are arranged into an array with B columns, how many rows are there?</p>
Compare	<p>Larger Unknown</p> <p>A blue hat costs $\\$B$. A red hat costs A times as much as the blue hat. How much does the red hat cost?</p>	<p>$A > 1$</p> <p>Smaller Unknown</p> <p>A red hat costs $\\$C$ and that is A times as much as a blue hat costs. How much does a blue hat cost?</p>	<p>Multiplier Unknown</p> <p>A red hat costs $\\$C$ and a blue hat costs $\\$B$. How many times as much does the red hat cost as the blue hat?</p>
	<p>Smaller Unknown</p> <p>A blue hat costs $\\$B$. A red hat costs A as much as the blue hat. How much does the red hat cost?</p>	<p>$A < 1$</p> <p>Larger Unknown</p> <p>A red hat costs $\\$C$ and that is A of the cost of a blue hat. How much does a blue hat cost?</p>	<p>Multiplier Unknown</p> <p>A red hat costs $\\$C$ and a blue hat costs $\\$B$. What fraction of the cost of the blue hat is the cost of the red hat?</p>

Source: Progressions for the Common Core State Standards in Mathematics (draft) online at http://commoncoretools.files.wordpress.com/2011/05/ccss_progression_cc_oa_k5_2011_05_302.pdf



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CCSS: Multiplication and Division

(4.NBT.5) Use place value understanding and properties of operations to perform multi-digit arithmetic. Multiply a whole number of up to four digits by a one-digit whole number, and **multiply two two-digit numbers, using strategies based on place value** and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or **area models**.

(4. NBT.6) Find whole-number quotients and remainders **with up to four-digit dividends and one-digit divisors, using strategies based on place value**, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or **area models**.

Example of Multiplication: Area Model

Computation of 36×94 connected with an area model



Computing products of two two-digit numbers requires using the distributive property several times when the factors are decomposed into base-ten units. For example,

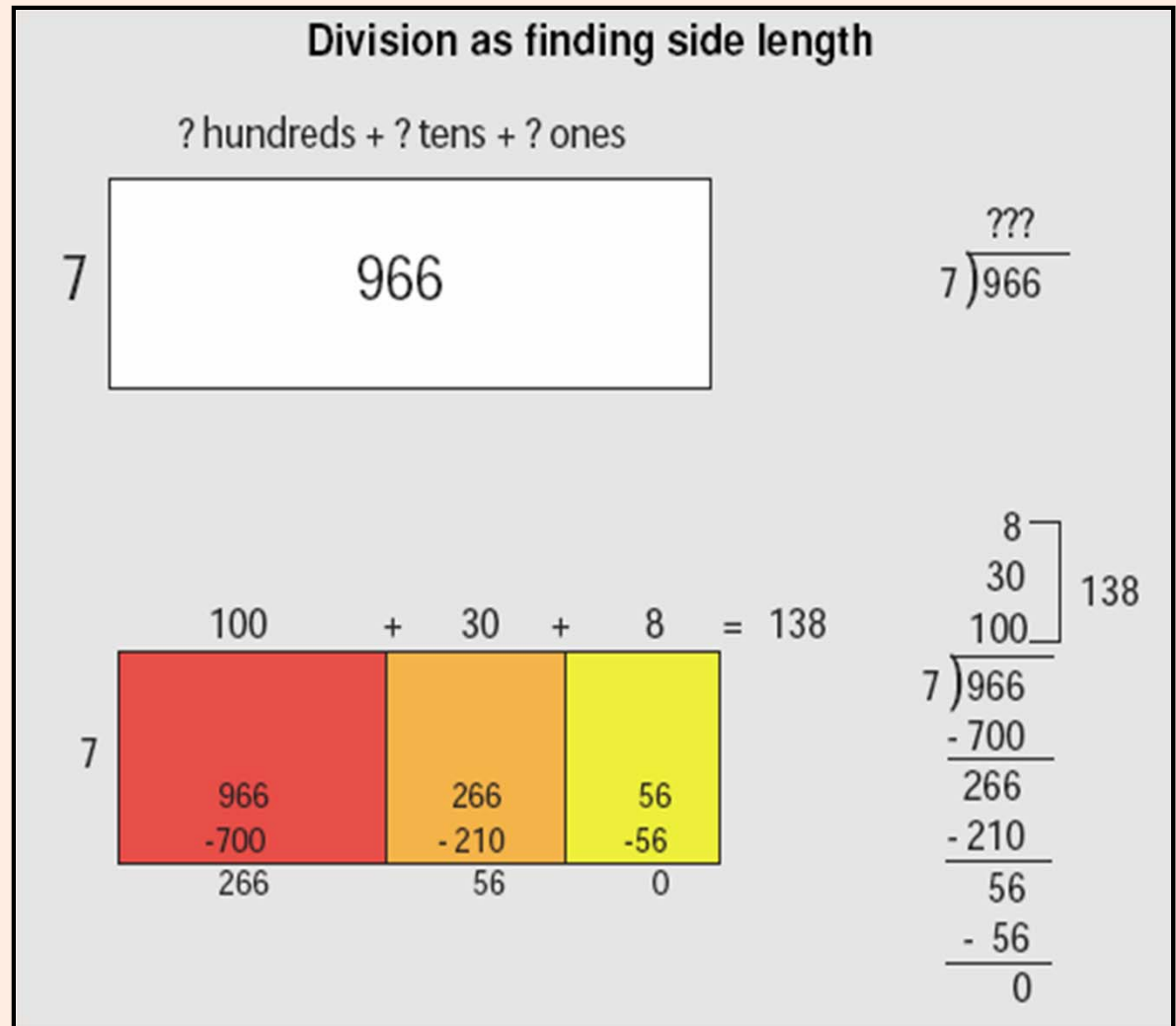
$$\begin{aligned} 36 \times 94 &= (30 + 6) \times (90 + 4) \\ &= (30 + 6) \times 90 + (30 + 6) \times 4 \\ &= 30 \times 90 + 6 \times 90 + 30 \times 4 + 6 \times 4. \end{aligned}$$

Source: Progressions for the Common Core State Standards in Mathematics (draft) online at http://commoncoretools.files.wordpress.com/2011/04/ccss_progression_nbt_2011_04_073.pdf

Example of Division: Area Model



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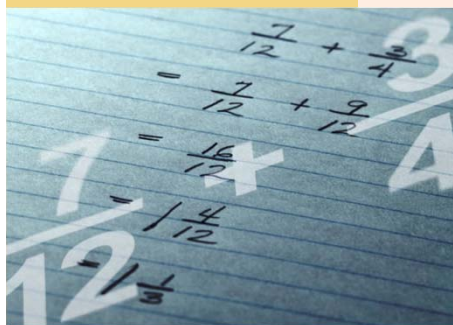


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Grades 3–5

A Focus on Fractions

- ☆ Represent a fraction $1/b$ on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into b equal parts. Recognize that each part has size $1/b$ and that the endpoint of the part based at 0 locates the number $1/b$ on the number line. (3.NF.2.a)
- ☆ Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g. by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. *For example, recognize an incorrect result $2/5 + 1/2 = 3/7$, by observing that $3/7 < 1/2$.* (5.NF.2)





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CCSS Grades 3–5

Number and Operations–Fractions

Examples of Topics	Gr.
<ul style="list-style-type: none">• Introduce fractions as a number on a number line	3
<ul style="list-style-type: none">• Add and subtract fractions (with like denominators)• Multiply a fraction by a whole number• Introduce decimals	4
<ul style="list-style-type: none">• Add and subtract fractions (with unlike denominators); multiply fractions• Divide unit fractions by whole numbers and whole numbers by unit fractions• Add, subtract, multiply and divide decimals (to hundredths)	5



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CCSS Grades 3–5

Number and Operations–Fractions

Implementing the Common Core State Standards (CCSS):
Instructional Considerations Activity Gr. 3-5 (Fractions)

COMMON CORE STATE STANDARD

Compare two fractions with the **same numerator** or the **same denominator** by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual fraction model.

(3.NF.3d)

Discuss how you might compare pairs of fractions using a visual fraction model. For discussion purposes, use the following two fraction pairs:

$\frac{7}{9}$ and $\frac{4}{9}$ (same denominator)

$\frac{4}{9}$ and $\frac{4}{7}$ (same numerator)

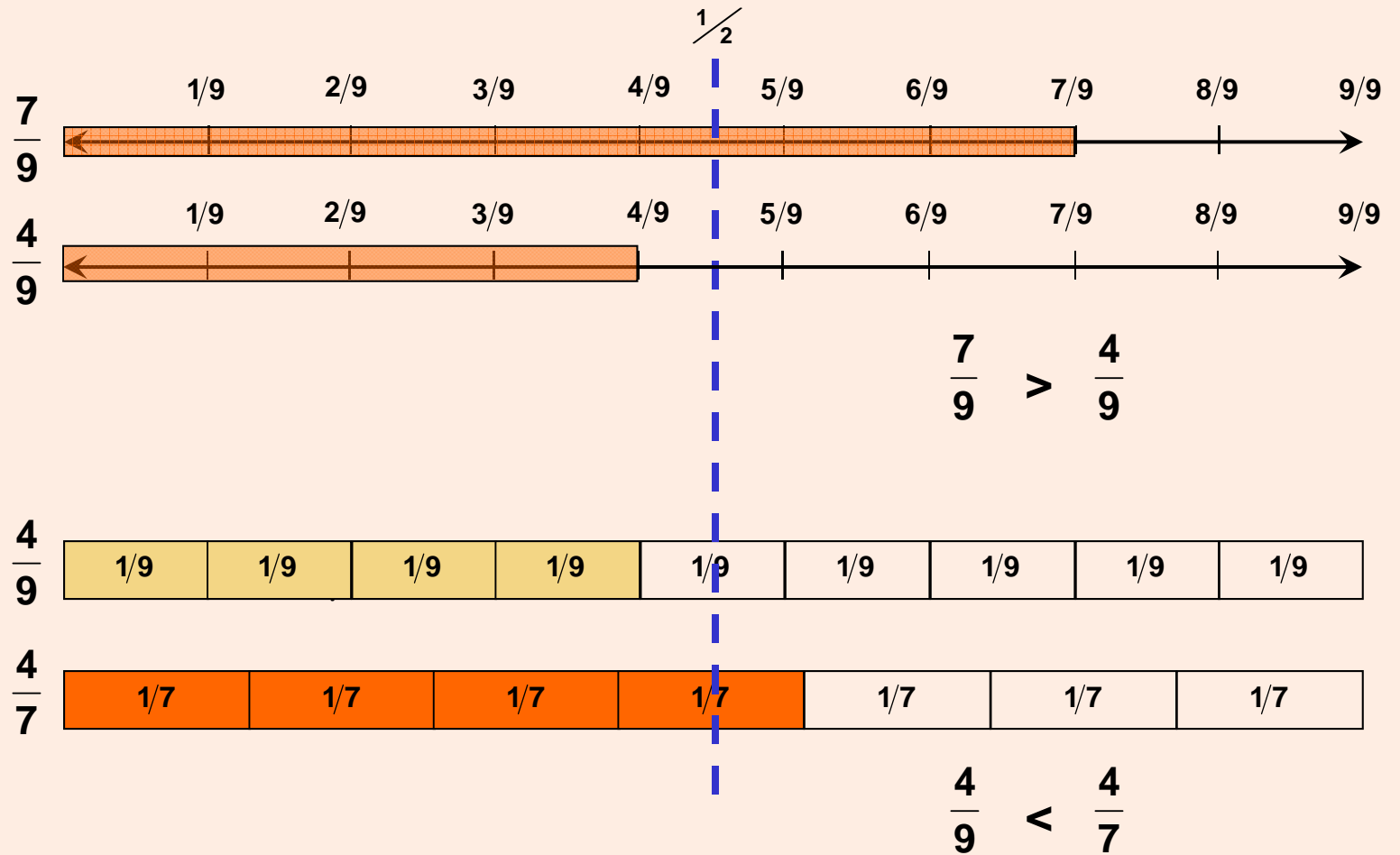
Read the standards in 3.NF. At your table discuss:

- How the standards develop understanding of fractions as numbers on a number line?
- What Mathematical Practices are supported?
- How would you compare pairs of fractions using a visual fraction model? Refer to your handout on standard 3.NF.3d.



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Fractions: Sample Solution





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CCSS Grades 3–5

Number and Operations–Fractions

Example of free resource:

Interactive number line with fractions

[http://www.mathsisfun.com/numbers/
fraction-number-line.html](http://www.mathsisfun.com/numbers/fraction-number-line.html)

Source: <http://www.mathsisfun.com>



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CCSS Grades 3–5

Number and Operations–Fractions

ACTIVITY

Watch the video of students locating fractions on a number line. Then at your table discuss:

- How does the number line help students understand fractions as numbers?
- What strategies did the students use?
- What grade 3 standards include similar strategies?

Link to video:

<https://docs.google.com/leaf?id=0Bzpm1PDffAnEZmM2NWZjZTkTNzkzMy00NDBhLTikOWUtNjFkOWZmNjJmOWJm&sort=name&layout=list&num=50>

Source: CaCCSS-M Task Force, hosted by the California Mathematics Project at <http://caccssm.cmpso.org/home>



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CCSS Grades 3–5

Number and Operations – Fractions

Group 1: Read standards 4.NF

Group 2: Read standards 5.NF

Then at your table:

- Discuss how the standards develop fractions and decimals? Identify a few benchmarks at the grade.
- Identify and discuss the use of various strategies (e.g., the use of visual models).
- Which Mathematical Practices standards are supported?
- How might these standards be familiar or unfamiliar to teachers?



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Transition to Common Core Grade Shifts: Grades 3-5

Content	1997 CA Standards Grade	Common Core Grade
Introduction to fractions as numbers	2	3
Add and subtract simple fractions, with like denominators	3	4
Multiply a fraction by a whole number and solve related word problems	5	4
Add, subtract and round decimals	4	5
Operations with negative integers	5	6
Dividing fractions by fractions	5	6

A Quick Look: Transition to the Common Core

A Quick Look: Transition to Common Core State Standards (CCSS)

Mathematics: Grade Three

Overview of Standards 1997 California Mathematics Standards ¹

Algebra and Functions

- Students select appropriate symbols, operations, and properties to represent, describe, simplify, and solve simple number relationships.
- Students represent simple functional relationships.

Number Sense

- Students understand the place value of whole numbers.
- Students calculate and solve problems involving addition, subtraction, multiplication, and division.
- Students understand the relationship between whole numbers, simple fractions, and decimals.

Overview of Standards CCSS

Operations and Algebraic Thinking

- Represent and solve problems involving multiplication and division.
- Understand properties of multiplication and the relationship between multiplication and division.
- Multiply and divide within 100.
- Solve problems involving the four operations, and identify and explain patterns in arithmetic.

Number and Operations in Base Ten

- Use place value understanding and properties of operations to perform multi-digit arithmetic.

Highlights

- Understand and use multiplication and division within 100 to solve word problems; fluently multiply and divide within 100 (**multiply and divide a multi-digit number (with up to four digits) and a one-digit number moves from grade three to grade four in the CCSS**). ▲
- Determine an unknown whole number in a multiplication or division equation relating three whole numbers (e.g., $8 \times ? = 48$).
- Solve two-step word problems using the four operations and an equation with a letter standing for an unknown quantity.
- Memorize all products of two one-digit numbers (**memorize the multiplication tables for 2s and 5s moves from grade two to grade three in the CCSS**). ▲²
- Understand that a four-digit number represents amounts of thousands, hundreds, tens and ones.
- Fluently add and subtract within 1,000 and multiply one-digit numbers by multiples of 10 in the range 10-90.
- Round whole numbers to the nearest 10 or 100



TOM TORLAKSON
State Superintendent
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A Quick Look: Transition to the Common Core

A Quick Look: Transition to Common Core State Standards (CCSS)		
Mathematics: Grade Three		
Overview of Standards 1997 California Mathematics Standards ¹	Overview of Standards CCSS	Highlights
Algebra and Functions <ul style="list-style-type: none"> Students select appropriate symbols, operations, and properties to represent, describe, simplify, and solve simple number relationships. Students represent simple functional relationships. Number Sense <ul style="list-style-type: none"> Students understand the place value of whole numbers. Students calculate and solve problems involving addition, subtraction, multiplication, and division. Students understand the relationship between whole numbers, simple fractions, and decimals. 	Operations and Algebraic Thinking <ul style="list-style-type: none"> Represent and solve problems involving multiplication and division. Understand properties of multiplication and the relationship between multiplication and division. Multiply and divide within 100. Solve problems involving the four operations, and identify and explain patterns in arithmetic. Number and Operations in Base Ten <ul style="list-style-type: none"> Use place value understanding and properties of operations to perform multi-digit arithmetic. 	<ul style="list-style-type: none"> Understand and use multiplication and division within 100 to solve word problems; fluently multiply and divide within 100 (multiply and divide a multi-digit number (with up to four digits) and a one-digit number moves from grade three to grade four in the CCSS). ▲ Determine an unknown whole number in a multiplication or division equation relating three whole numbers (e.g., $8 \times ? = 48$). Solve two-step word problems using the four operations and an equation with a letter standing for an unknown quantity. Memorize all products of two one-digit numbers (memorize the multiplication tables for 2s and 5s moves from grade two to grade three in the CCSS). ▲² Understand that a four-digit number represents amounts of thousands, hundreds, tens and ones. Fluently add and subtract within 1,000 and multiply one-digit numbers by multiples of 10 in the range 10-90. Round whole numbers to the nearest 10 or 100

ACTIVITY

Review the charts, then
at your table discuss:

How are the two sets of
standards similar or
different?

How might the shifting
of some content to
other grades impact
your teaching?



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State Superintendent
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A Look at...

Kindergarten through Grade Six in California Public Schools

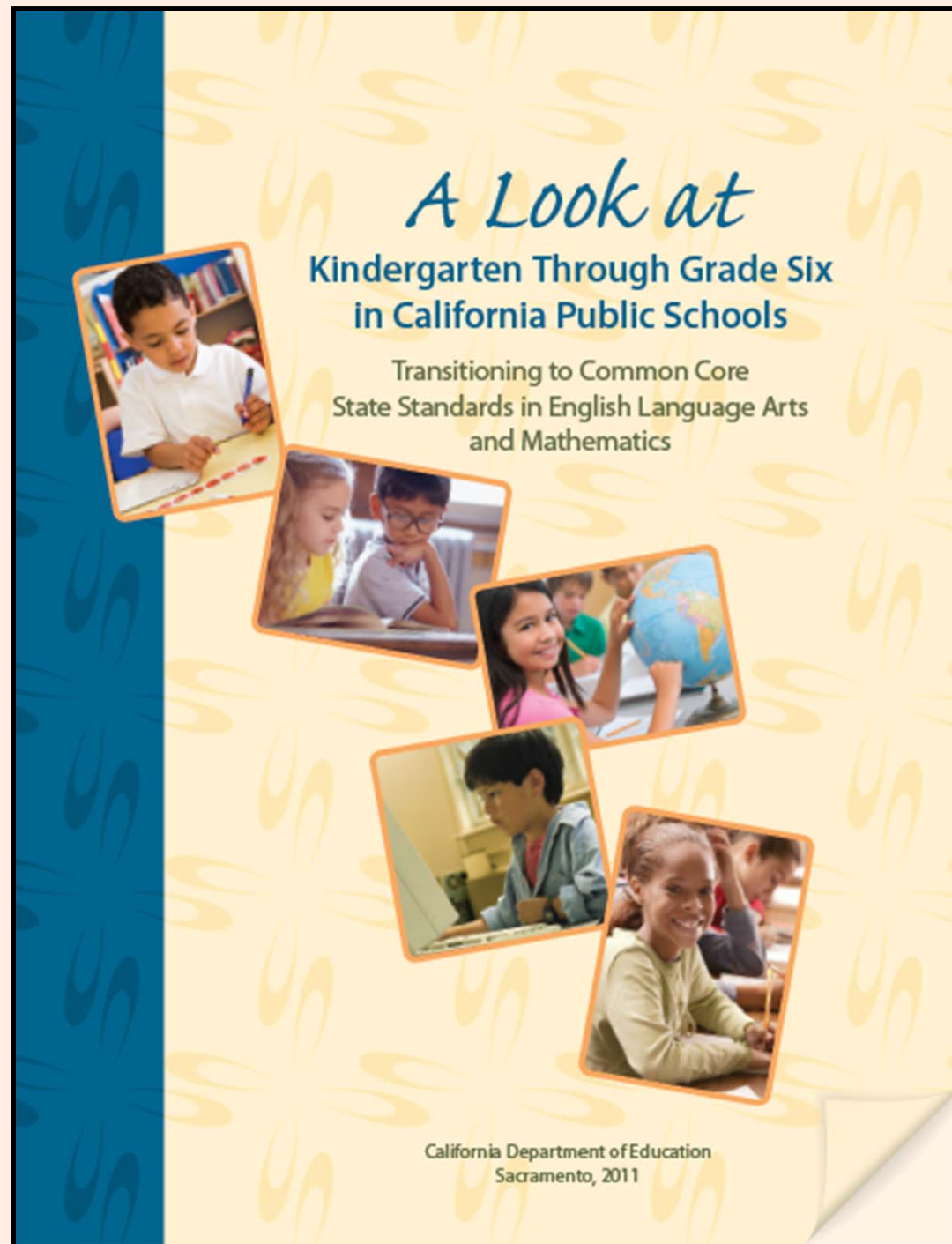
Including information about the new
Common Core State Standards



STANDARDS, CURRICULUM FRAMEWORKS AND INSTRUCTIONAL RESOURCES DIVISION
CURRICULUM, LEARNING AND ACCOUNTABILITY BRANCH
CALIFORNIA DEPARTMENT OF EDUCATION
Prepublication Edition: January 2011



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Common Core State Standards Resources

Website <http://www.cde.ca.gov/ci/cc>



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Common Core State Standards Resources

Information and frequently asked questions about the new academic content standards adopted by the State Board of Education on August 2, 2010.

The Common Core State Standards (CCSS) were developed through a state-led initiative to establish consistent and clear education standards for English-language arts and mathematics that would better prepare students for success in college, career, and the competitive global economy. The California State Board of Education (SBE) adopted the standards on August 2, 2010. To learn more about the adoption process, click [here](#).

Common Core State Standards

- [Common Core State Standards for English-Language Arts and Literacy in History/Social Studies, Science and Technical Subjects](#) (PDF; Outside Source)
The CCSS adopted by the California SBE on August 2, 2010.
- [Common Core State Standards for Mathematics](#) (PDF; Outside Source)
The CCSS adopted by the California SBE on August 2, 2010.
- [Common Core State Standards Initiative](#) (Outside Source)
The multi-state CCSS released on June 2, 2010. Includes information about the standards, FAQ, and the appendices to the standards.
- [Superintendent's Supplemental Instructional Materials Review](#)



CCSSO Mathematics CCSS

Tools and resources primarily developed by Council of Chief State School Officers (CCSSO) and the lead writers of the standards to help states as they implement the Common Core State Standards Mathematics.

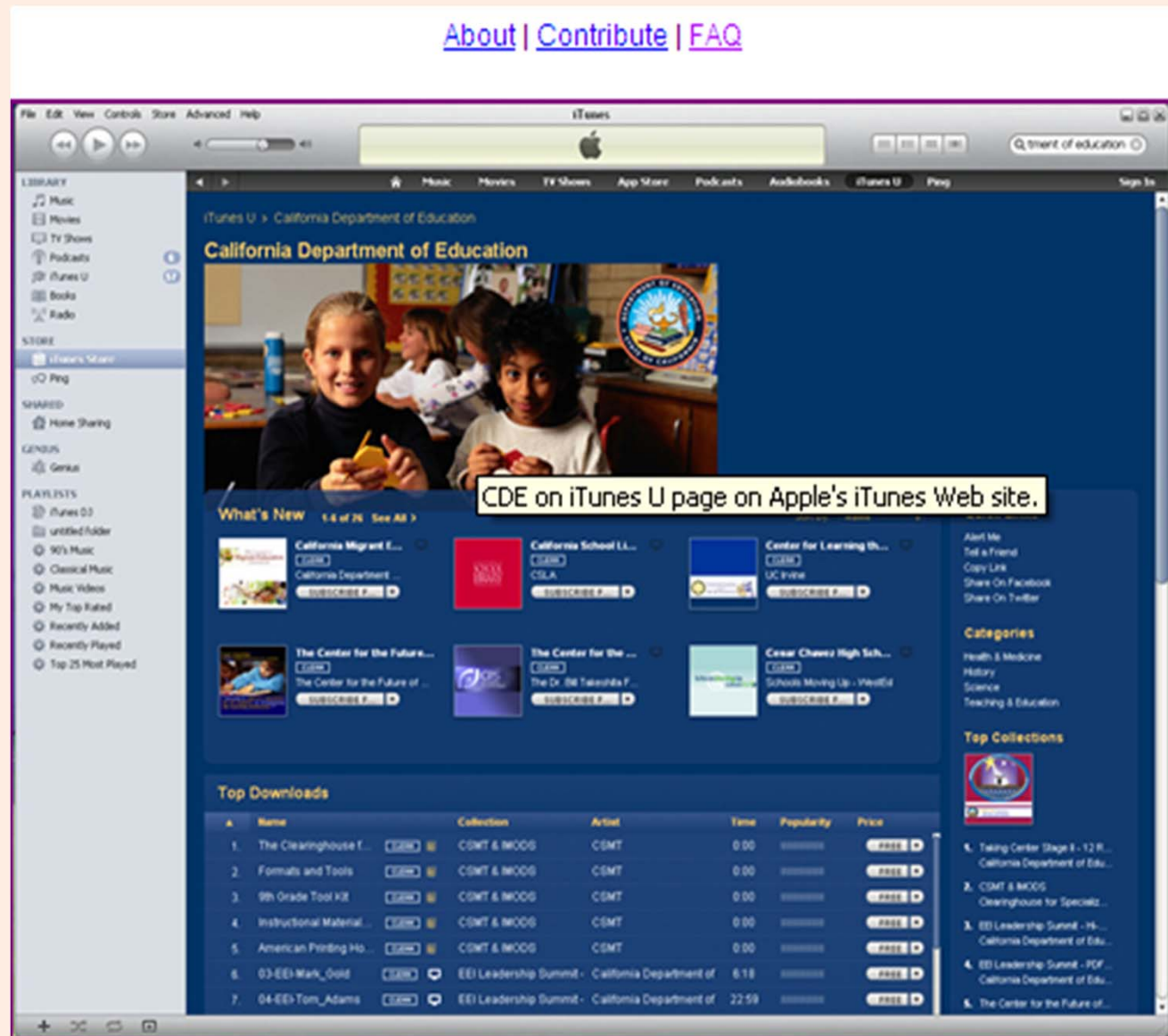
- [Progression Documents for the CCSS Mathematics Standards](#) (Outside Source)
Narrative documents describing the progression of a topic across a number of grade levels, informed both by research on children's cognitive development and by the logical structure of mathematics.
- [Hyperlinked Version of the Mathematics Standards](#) (Outside Source)
A version of the math standards that has hyperlinks within the document.
- [Visual Depiction of the Mathematical Practices](#) (Outside Source)
This visual displays some higher-order structure to the Standards for Mathematical Practice.
- [Mathematics Lead Writer Bill McCallum's Blog](#) (Outside Source)
CCSS Mathematics lead writer, Bill McCallum, provides information regarding implementation projects related to the CCSS for mathematics.



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Common Core State Standards

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2010

NEW URL BOX

CDE Information on CCSS

Links

Report a Concern

Common Core State Standards

National Governors Association & Council of Chief State School Officers

Description

The Common Core State Standards Initiative is a state-led effort coordinated by the National Governors Association Center for Best Practices (NGA Center) and the Council of Chief State School Officers (CCSSO). The standards were developed in collaboration with teachers, school administrators, and experts, to provide a clear and consistent framework to prepare our children for college and the workforce. California adopted the Common Cor...

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2.	Common Core Standards Update ppt		11/5/10	This PDF document features the P...	i	FREE
3.	Common Core California Standar...	26:16	11/5/10	This video features a presentation ...	i	FREE
4.	Common Core California Standar...	26:16	11/9/10	This video for mobile devices featur...	i	FREE
5.	General Information on Common ...		11/12/10			FREE
6.	CCSS FAQs 2010		11/12/10	Most frequently asked questions re...	i	FREE
7.	Highlights of the Common Core St...		11/12/10	The Common Core State Standard...	i	FREE
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9.	Common Core State Standards for...		11/12/10	The Common Core State Standard...	i	FREE
10.	CCSS Math Course of Study flowch...		11/12/10	This is a chart that shows a sampl...	i	FREE
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Implications for your work



Take a few minutes to discuss with your neighbors:

- What is the most important/valuable piece of information you learned in this session?
- What are some first steps you might take to implement the CCSS?



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