

C.C.M.A.C. – 1st Meeting – September 19, 2013

COMMON CORE MATHEMATICS ADVISORY COMMITTEE

Welcome, and Thank You!

You are a part of a very important group of experts. You are all being asked to help chart a course for the future of math in San Gabriel USD.

The Common Core represents both a challenge and an opportunity for us to lay out a successful course for San Gabriel's schools that will last for years to come.



CCMAC – GOALS

Elementary

Research and create new assessments that align with planned Common Core assessments

Secondary

Recommend a Secondary Math Pathway for the District

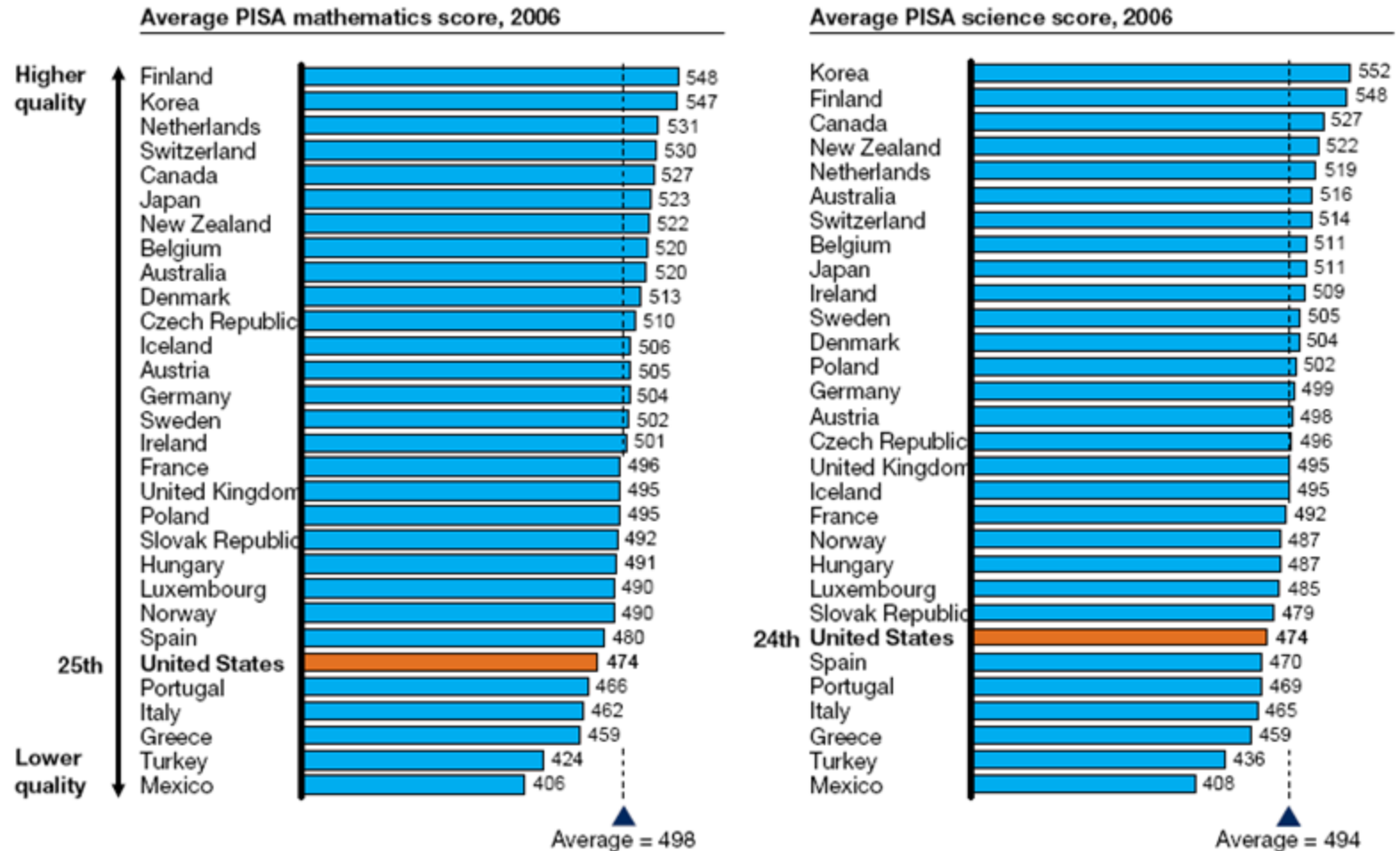
Identify Necessary Instructional Shifts

Identify Necessary Types of Technology Tools

Write a Common Core Math Transition Plan

After Five Years of NCLB

PISA rankings show United States trailing other OECD countries



Note: Results are for OECD countries; OECD partner countries not included. Differences may not be statistically significant.

SOURCE: OECD

After Over 10 Years of NCLB

HOME PAGE TODAY'S PAPER VIDEO MOST POPULAR U.S. Edition ▼

The New York Times

Education

WORLD U.S. N.Y. / REGION BUSINESS TECHNOLOGY SCIENCE HEALTH SPORTS OPINION

POLITICS EDUCATION TEXAS

U.S. Students Still Lag Globally in Math and Science, Tests Show

By MOTOKO RICH

Published: December 11, 2012

U.S. Students Rank 32 in Math Proficiency, 17 in Reading, Study Says

By [School Library Journal Archive Content](#) on  August 23, 2011

By SLJ Staff, 8/23/2011



Our nation's graduating high school class of 2011 had a 32 percent proficiency rate in math and a 31 percent proficiency rate in reading, leaving many to question whether schools are adequately preparing students for the 21st century global economy, says a new report. U.S. students fall behind 31 countries in math proficiency and behind 16 countries in reading proficiency, according to the recent study, "[Globally Challenged: Are U.S. Students Ready to Compete?](#)" by Harvard's Program on Education

Policy and Governance.

4TH GRADE READING	4TH GRADE MATH	8TH GRADE MATH	8TH GRADE SCIENCE
1. Hong Kong	Singapore	Korea	Singapore
2. Russia	Korea	Singapore	Taiwan
3. Finland	Hong Kong	Taiwan	Korea
4. Singapore	Taiwan	Hong Kong	Japan
5. N. Ireland*	Japan	Japan	Finland
6. U.S.	N. Ireland	Russia	Slovenia
7. Denmark*	Belgium	Israel*	Russia
8. Croatia*	Finland*	Finland*	Hong Kong
9. Taiwan*	England*	U.S.	England*
10. Ireland*	Russia*	England*	U.S.
	U.S. (11th)		

*Not statistically different from U.S.

SOURCE: National Center for Education Statistics AP

What do other countries do?

- ⦿ Why do other countries consistently outperform the United States in these international measures?
- ⦿ There are a wide variety of possibilities
 - Socioeconomic reasons
 - Teacher recruitment/compensation
 - Systemic educational differences
- ⦿ It's likely *not* just one thing... but what can we do differently?

Topic	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8
Whole number meaning	●	●	●	⊙	⊙			
Whole number operations	●	●	●	●	⊙			
Measurement units	○	●	●	●	●	●	⊙	
Common fractions			○	●	●	⊙		
Equations and formulas			○	⊙	⊙	⊙	●	●
Data representation and analysis			○	○	⊙	⊙		○
2-D geometry: basics			○	⊙	⊙	⊙	●	●
Polygons and circles				⊙	⊙	⊙	●	●
Perimeter, area and volume				⊙	⊙	⊙	⊙	○
Rounding and significant figures				⊙	⊙			
Estimating computations				⊙	⊙	⊙		
Properties of whole number operations				○	⊙			
Estimating quantity and size				○	○			
Decimal fractions				⊙	●	⊙		
Relationship of common and decimal fractions				⊙	●	⊙		
Properties of common and decimal fractions					⊙	⊙		
Percentages					⊙	⊙		
Proportionality concepts					⊙	⊙	⊙	○
Proportionality problems					⊙	⊙	●	●
2-D coordinate geometry					○	○	⊙	⊙
Geometry: transformations						⊙	⊙	⊙
Negative numbers, integers and their properties						○	⊙	
Number theory							⊙	○
Exponents, roots and radicals							⊙	⊙
Exponents and orders of magnitude							○	○
Measurement estimation and errors							○	
Constructions w/ straightedge and compass							●	○
3-D geometry							⊙	●
Congruence and similarity								●
Rational numbers and their properties								○
Patterns, relations and functions								○
Slope and trigonometry								○
Number of additional topics intended, on average, by A+ countries to complete their curriculum at each grade level. ¹	2/4	6/7	5/8	1/1	1/2	3/5	6/10	3/7

A+

Countries

Topic	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8
Whole number meaning	•	•	•	•	•	•	•	•
Whole number operations	•	•	•	•	•	•	•	•
Measurement units	•	•	•	•	•	•	•	•
Common fractions	•	•	•	•	•	•	•	•
Equations and formulas	•	•	•	•	•	•	•	•
Data representation and analysis	•	•	•	•	•	•	•	•
2-D geometry: basics	•	•	•	•	•	•	•	•
Polygons and circles	•	•	•	•	•	•	•	•
Perimeter, area and volume	•	•	•	•	•	•	•	•
Rounding and significant figures	•	•	•	•	•	•	•	•
Estimating computations	•	•	•	•	•	•	•	•
Properties of whole number operations	•	•	•	•	•	•	•	•
Estimating quantity and size	•	•	•	•	•	•	•	•
Decimal fractions	•	•	•	•	•	•	•	•
Relationship of common and decimal fractions	•	•	•	•	•	•	•	•
Properties of common and decimal fractions					•	•	•	•
Percentages					•	•	•	•
Proportionality concepts					•	•	•	•
Proportionality problems					•	•	•	•
2-D coordinate geometry	•	•	•	•	•	•	•	•
Geometry: transformations	•	•	•	•	•	•	•	•
Negative numbers, integers and their properties					•	•	•	•
Number theory	•	•	•	•	•	•	•	•
Exponents, roots and radicals					•	•	•	•
Exponents and orders of magnitude	•	•	•	•	•	•	•	•
Measurement estimation and errors	•	•	•	•	•	•	•	•
Constructions w/ straightedge/ruler and compass	•	•	•	•	•	•	•	•
3-D geometry	•	•	•	•	•	•	•	•
Congruence and similarity	•	•	•	•	•	•	•	•
Rational numbers and their properties					•	•	•	•
Patterns, relations and functions	•	•	•	•	•	•	•	•
Slope and trigonometry					•	•	•	•
Number of additional topics intended by the expert standards to complete the US mathematics curriculum at each grade level.	0	0	1	1	2	3	5	7

United States

The Common Core Response

- ⦿ Create standards that are
 - Coherent
 - Focused
 - Clear and Specific
 - The same goals for *all* US students
- ⦿ Identify key ideas, understandings, and skills
- ⦿ Emphasize *deep learning* of these concepts

1999 | CC

Analysis of California Mathematics standards to Common Core standards- Kindergarten											
Strand	CA Math Standard	Domain	Common Core Standard (CCS)	Alignment	Comments in reference to CCS	Strand	CA Math Standard	Domain	Common Core Standard (CCS)	Alignment	Comments in reference to CCS
19 Number Sense	19 Student understands the relationship between numbers and quantities, i.e., that objects in different configurations represent the same quantity or composition.	Counting and Cardinality	E.CC.1. Count number names to 100 and use the number to represent the number of objects in a group.	Yes		13 Measurement and Geometry	13.1 Measure the length, weight and capacity of objects by making direct comparisons with reference objects (e.g., one which object is longer, lighter, bigger, heavier, or holds more).	Measurement and Data	E.MD.1. Describe and compare measurable attributes. Classify objects into groups according to the name of the attribute. Count the number of objects in each group and compare the groups by using the terms "more than," "less than," and "same amount."	Partial	13.100 (Circle numbers) Tell and write time.
	1 I compare two sets and/or objects (up to ten objects in each group) and identify which set is equal to, more than, or less than the other.	Counting and Cardinality	E.CC.2. Compare two numbers between 1 and 10 represented in different ways (e.g., numerals, number names, tally marks, ten-frames, etc.).	Yes	"How (include grouping) up to ten objects."		13.2 Compare the length, weight and capacity of objects by making direct comparisons with reference objects (e.g., one which object is longer, lighter, bigger, heavier, or holds more).	Measurement and Data	E.MD.2. Compare two measurable attributes of objects, such as length or weight. Describe measurable attributes of a single object.	Yes	
	1.1 Count, recognize, represent, name, and order a number of objects (up to 10).	Counting and Cardinality	E.CC.3. Count forward beginning from a given number (within 10) without reciting all the numbers in sequence (e.g., starting at 5, begin at 5 and say: 6, 7, 8, 9, 10).	Partial	CCS has students count to 10 and by ones and tens; but extension of 10 to 100 and some numbers up to 100 not covered.		13.3 Measure the length, weight and capacity of objects by making direct comparisons with reference objects (e.g., one which object is longer, lighter, bigger, heavier, or holds more).		E.MD.3. Identify measurable attributes of objects, such as length or weight. Describe measurable attributes of a single object.	Yes	
	1.2 Count, recognize, represent, name, and order a number of objects (up to 10).	Counting and Cardinality	E.CC.4. Write number names from 0 to 20. Represent a number of objects with written numerals 0-20 with 0 representing a count of no objects.	Partial	CCS has students count to 20 and by ones and tens; but extension of 10 to 100 and some numbers up to 100 not covered.		13.4 Measure the length, weight and capacity of objects by making direct comparisons with reference objects (e.g., one which object is longer, lighter, bigger, heavier, or holds more).		E.MD.4. Measure the length, weight and capacity of objects by making direct comparisons with reference objects (e.g., one which object is longer, lighter, bigger, heavier, or holds more).	Yes	
	1.3 Count, recognize, represent, name, and order a number of objects (up to 10).	Counting and Cardinality	E.CC.5. Count forward beginning from a given number (within 10) without reciting all the numbers in sequence (e.g., starting at 5, begin at 5 and say: 6, 7, 8, 9, 10).	Partial	CCS has students count to 10 and by ones and tens; but extension of 10 to 100 and some numbers up to 100 not covered.		13.5 Measure the length, weight and capacity of objects by making direct comparisons with reference objects (e.g., one which object is longer, lighter, bigger, heavier, or holds more).		E.MD.5. Measure the length, weight and capacity of objects by making direct comparisons with reference objects (e.g., one which object is longer, lighter, bigger, heavier, or holds more).	Yes	
Strand	CA Math Standard	Domain	Common Core Standard (CCS)	Alignment	Comments in reference to CCS	Strand	CA Math Standard	Domain	Common Core Standard (CCS)	Alignment	Comments in reference to CCS
20 Number Sense	20 Student understands and describes simple addition and subtraction.	Operations and Algebraic Thinking	E.OA.1. (Circle Number)	Yes		21 Measurement and Geometry	21.1 Measure the length, weight and capacity of objects by making direct comparisons with reference objects (e.g., one which object is longer, lighter, bigger, heavier, or holds more).	Measurement and Data	E.MD.1. Describe and compare measurable attributes. Classify objects into groups according to the name of the attribute. Count the number of objects in each group and compare the groups by using the terms "more than," "less than," and "same amount."	Partial	21.100 (Circle numbers) Tell and write time.
	20.1 Count, recognize, represent, name, and order a number of objects (up to 10).	Counting and Cardinality	E.CC.3. Count forward beginning from a given number (within 10) without reciting all the numbers in sequence (e.g., starting at 5, begin at 5 and say: 6, 7, 8, 9, 10).	Partial	CCS has students count to 10 and by ones and tens; but extension of 10 to 100 and some numbers up to 100 not covered.		21.2 Compare the length, weight and capacity of objects by making direct comparisons with reference objects (e.g., one which object is longer, lighter, bigger, heavier, or holds more).	Measurement and Data	E.MD.2. Compare two measurable attributes of objects, such as length or weight. Describe measurable attributes of a single object.	Yes	
	20.2 Count, recognize, represent, name, and order a number of objects (up to 10).	Counting and Cardinality	E.CC.4. Write number names from 0 to 20. Represent a number of objects with written numerals 0-20 with 0 representing a count of no objects.	Partial	CCS has students count to 20 and by ones and tens; but extension of 10 to 100 and some numbers up to 100 not covered.		21.3 Measure the length, weight and capacity of objects by making direct comparisons with reference objects (e.g., one which object is longer, lighter, bigger, heavier, or holds more).		E.MD.3. Identify measurable attributes of objects, such as length or weight. Describe measurable attributes of a single object.	Yes	
	20.3 Count, recognize, represent, name, and order a number of objects (up to 10).	Counting and Cardinality	E.CC.5. Count forward beginning from a given number (within 10) without reciting all the numbers in sequence (e.g., starting at 5, begin at 5 and say: 6, 7, 8, 9, 10).	Partial	CCS has students count to 10 and by ones and tens; but extension of 10 to 100 and some numbers up to 100 not covered.		21.4 Measure the length, weight and capacity of objects by making direct comparisons with reference objects (e.g., one which object is longer, lighter, bigger, heavier, or holds more).		E.MD.4. Measure the length, weight and capacity of objects by making direct comparisons with reference objects (e.g., one which object is longer, lighter, bigger, heavier, or holds more).	Yes	
	20.4 Count, recognize, represent, name, and order a number of objects (up to 10).	Counting and Cardinality	E.CC.6. Write number names from 0 to 20. Represent a number of objects with written numerals 0-20 with 0 representing a count of no objects.	Partial	CCS has students count to 20 and by ones and tens; but extension of 10 to 100 and some numbers up to 100 not covered.		21.5 Measure the length, weight and capacity of objects by making direct comparisons with reference objects (e.g., one which object is longer, lighter, bigger, heavier, or holds more).		E.MD.5. Measure the length, weight and capacity of objects by making direct comparisons with reference objects (e.g., one which object is longer, lighter, bigger, heavier, or holds more).	Yes	
Strand	CA Math Standard	Domain	Common Core Standard (CCS)	Alignment	Comments in reference to CCS	Strand	CA Math Standard	Domain	Common Core Standard (CCS)	Alignment	Comments in reference to CCS
21 Number Sense	21 Use various strategies to determine the number of objects that are each in two groups. (Use two groups that are each less than 10).	Operations and Algebraic Thinking	E.OA.2. (Circle Number)	Yes		22 Measurement and Geometry	22.1 Measure the length, weight and capacity of objects by making direct comparisons with reference objects (e.g., one which object is longer, lighter, bigger, heavier, or holds more).	Measurement and Data	E.MD.1. Describe and compare measurable attributes. Classify objects into groups according to the name of the attribute. Count the number of objects in each group and compare the groups by using the terms "more than," "less than," and "same amount."	Partial	22.100 (Circle numbers) Tell and write time.
	21.1 Count, recognize, represent, name, and order a number of objects (up to 10).	Counting and Cardinality	E.CC.3. Count forward beginning from a given number (within 10) without reciting all the numbers in sequence (e.g., starting at 5, begin at 5 and say: 6, 7, 8, 9, 10).	Partial	CCS has students count to 10 and by ones and tens; but extension of 10 to 100 and some numbers up to 100 not covered.		22.2 Compare the length, weight and capacity of objects by making direct comparisons with reference objects (e.g., one which object is longer, lighter, bigger, heavier, or holds more).	Measurement and Data	E.MD.2. Compare two measurable attributes of objects, such as length or weight. Describe measurable attributes of a single object.	Yes	
	21.2 Count, recognize, represent, name, and order a number of objects (up to 10).	Counting and Cardinality	E.CC.4. Write number names from 0 to 20. Represent a number of objects with written numerals 0-20 with 0 representing a count of no objects.	Partial	CCS has students count to 20 and by ones and tens; but extension of 10 to 100 and some numbers up to 100 not covered.		22.3 Measure the length, weight and capacity of objects by making direct comparisons with reference objects (e.g., one which object is longer, lighter, bigger, heavier, or holds more).		E.MD.3. Identify measurable attributes of objects, such as length or weight. Describe measurable attributes of a single object.	Yes	
	21.3 Count, recognize, represent, name, and order a number of objects (up to 10).	Counting and Cardinality	E.CC.5. Count forward beginning from a given number (within 10) without reciting all the numbers in sequence (e.g., starting at 5, begin at 5 and say: 6, 7, 8, 9, 10).	Partial	CCS has students count to 10 and by ones and tens; but extension of 10 to 100 and some numbers up to 100 not covered.		22.4 Measure the length, weight and capacity of objects by making direct comparisons with reference objects (e.g., one which object is longer, lighter, bigger, heavier, or holds more).		E.MD.4. Measure the length, weight and capacity of objects by making direct comparisons with reference objects (e.g., one which object is longer, lighter, bigger, heavier, or holds more).	Yes	
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22 Number Sense	22 Use various strategies to determine the number of objects that are each in two groups. (Use two groups that are each less than 10).	Operations and Algebraic Thinking	E.OA.2. (Circle Number)	Yes		23 Measurement and Geometry	23.1 Measure the length, weight and capacity of objects by making direct comparisons with reference objects (e.g., one which object is longer, lighter, bigger, heavier, or holds more).	Measurement and Data	E.MD.1. Describe and compare measurable attributes. Classify objects into groups according to the name of the attribute. Count the number of objects in each group and compare the groups by using the terms "more than," "less than," and "same amount."	Partial	23.100 (Circle numbers) Tell and write time.
	22.1 Count, recognize, represent, name, and order a number of objects (up to 10).	Counting and Cardinality	E.CC.3. Count forward beginning from a given number (within 10) without reciting all the numbers in sequence (e.g., starting at 5, begin at 5 and say: 6, 7, 8, 9, 10).	Partial	CCS has students count to 10 and by ones and tens; but extension of 10 to 100 and some numbers up to 100 not covered.		23.2 Compare the length, weight and capacity of objects by making direct comparisons with reference objects (e.g., one which object is longer, lighter, bigger, heavier, or holds more).	Measurement and Data	E.MD.2. Compare two measurable attributes of objects, such as length or weight. Describe measurable attributes of a single object.	Yes	
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23 Number Sense	23 Use various strategies to determine the number of objects that are each in two groups. (Use two groups that are each less than 10).	Operations and Algebraic Thinking	E.OA.2. (Circle Number)	Yes		24 Measurement and Geometry	24.1 Measure the length, weight and capacity of objects by making direct comparisons with reference objects (e.g., one which object is longer, lighter, bigger, heavier, or holds more).	Measurement and Data	E.MD.1. Describe and compare measurable attributes. Classify objects into groups according to the name of the attribute. Count the number of objects in each group and compare the groups by using the terms "more than," "less than," and "same amount."	Partial	24.100 (Circle numbers) Tell and write time.
	23.1 Count, recognize, represent, name, and order a number of objects (up to 10).	Counting and Cardinality	E.CC.3. Count forward beginning from a given number (within 10) without reciting all the numbers in sequence (e.g., starting at 5, begin at 5 and say: 6, 7, 8, 9, 10).	Partial	CCS has students count to 10 and by ones and tens; but extension of 10 to 100 and some numbers up to 100 not covered.		24.2 Compare the length, weight and capacity of objects by making direct comparisons with reference objects (e.g., one which object is longer, lighter, bigger, heavier, or holds more).	Measurement and Data	E.MD.2. Compare two measurable attributes of objects, such as length or weight. Describe measurable attributes of a single object.	Yes	
	23.2 Count, recognize, represent, name, and order a number of objects (up to 10).	Counting and Cardinality	E.CC.4. Write number names from 0 to 20. Represent a number of objects with written numerals 0-20 with 0 representing a count of no objects.	Partial	CCS has students count to 20 and by ones and tens; but extension of 10 to 100 and some numbers up to 100 not covered.		24.3 Measure the length, weight and capacity of objects by making direct comparisons with reference objects (e.g., one which object is longer, lighter, bigger, heavier, or holds more).		E.MD.3. Identify measurable attributes of objects, such as length or weight. Describe measurable attributes of a single object.	Yes	
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	23.4 Count, recognize, represent, name, and order a number of objects (up to 10).	Counting and Cardinality	E.CC.6. Write number names from 0 to 20. Represent a number of objects with written numerals 0-20 with 0 representing a count of no objects.	Partial	CCS has students count to 20 and by ones and tens; but extension of 10 to 100 and some numbers up to 100 not covered.		24.5 Measure the length, weight and capacity of objects by making direct comparisons with reference objects (e.g., one which object is longer, lighter, bigger, heavier, or holds more).		E.MD.5. Measure the length, weight and capacity of objects by making direct comparisons with reference objects (e.g., one which object is longer, lighter, bigger, heavier, or holds more).	Yes	
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24 Number Sense	24 Use various strategies to determine the number of objects that are each in two groups. (Use two groups that are each less than 10).	Operations and Algebraic Thinking	E.OA.2. (Circle Number)	Yes		25 Measurement and Geometry	25.1 Measure the length, weight and capacity of objects by making direct comparisons with reference objects (e.g., one which object is longer, lighter, bigger, heavier, or holds more).	Measurement and Data	E.MD.1. Describe and compare measurable attributes. Classify objects into groups according to the name of the attribute. Count the number of objects in each group and compare the groups by using the terms "more than," "less than," and "same amount."	Partial	25.100 (Circle numbers) Tell and write time.
	24.1 Count, recognize, represent, name, and order a number of objects (up to 10).	Counting and Cardinality	E.CC.3. Count forward beginning from a given number (within 10) without reciting all the numbers in sequence (e.g., starting at 5, begin at 5 and say: 6, 7, 8, 9, 10).	Partial	CCS has students count to 10 and by ones and tens; but extension of 10 to 100 and some numbers up to 100 not covered.		25.2 Compare the length, weight and capacity of objects by making direct comparisons with reference objects (e.g., one which object is longer, lighter, bigger, heavier, or holds more).	Measurement and Data	E.MD.2. Compare two measurable attributes of objects, such as length or weight. Describe measurable attributes of a single object.	Yes	
	24.2 Count, recognize, represent, name, and order a number of objects (up to 10).	Counting and Cardinality	E.CC.4. Write number names from 0 to 20. Represent a number of objects with written numerals 0-20 with 0 representing a count of no objects.	Partial	CCS has students count to 20 and by ones and tens; but extension of 10 to 100 and some numbers up to 100 not covered.		25.3 Measure the length, weight and capacity of objects by making direct comparisons with reference objects (e.g., one which object is longer, lighter, bigger, heavier, or holds more).		E.MD.3. Identify measurable attributes of objects, such as length or weight. Describe measurable attributes of a single object.	Yes	
	24.3 Count, recognize, represent, name, and order a number of objects (up to 10).	Counting and Cardinality	E.CC.5. Count forward beginning from a given number (within 10) without reciting all the numbers in sequence (e.g., starting at 5, begin at 5 and say: 6, 7, 8, 9, 10).	Partial	CCS has students count to 10 and by ones and tens; but extension of 10 to 100 and some numbers up to 100 not covered.		25.4 Measure the length, weight and capacity of objects by making direct comparisons with reference objects (e.g., one which object is longer, lighter, bigger, heavier, or holds more).		E.MD.4. Measure the length, weight and capacity of objects by making direct comparisons with reference objects (e.g., one which object is longer, lighter, bigger, heavier, or holds more).	Yes	
	24.4 Count, recognize, represent, name, and order a number of objects (up to 10).	Counting and Cardinality	E.CC.6. Write number names from 0 to 20. Represent a number of objects with written numerals 0-20 with 0 representing a count of no objects.	Partial	CCS has students count to 20 and by ones and tens; but extension of 10 to 100 and some numbers up to 100 not covered.		25.5 Measure the length, weight and capacity of objects by making direct comparisons with reference objects (e.g., one which object is longer, lighter, bigger, heavier, or holds more).		E.MD.5. Measure the length, weight and capacity of objects by making direct comparisons with reference objects (e.g., one which object is longer, lighter, bigger, heavier, or holds more).	Yes	
Strand	CA Math Standard	Domain	Common Core Standard (CCS)	Alignment	Comments in reference to CCS	Strand	CA Math Standard	Domain	Common Core Standard (CCS)	Alignment	Comments in reference to CCS
25 Number Sense	25 Use various strategies to determine the number of objects that are each in two groups. (Use two groups that are each less than 10).	Operations and Algebraic Thinking	E.OA.2. (Circle Number)	Yes		26 Measurement and Geometry	26.1 Measure the length, weight and capacity of objects by making direct comparisons with reference objects (e.g., one which object is longer, lighter, bigger, heavier, or holds more).	Measurement and Data	E.MD.1. Describe and compare measurable attributes. Classify objects into groups according to the name of the attribute. Count the number of objects in each group and compare the groups by using the terms "more than," "less than," and "same amount."	Partial	26.100 (Circle numbers) Tell and write time.
	25.1 Count, recognize, represent, name, and order a number of objects (up to 10).	Counting and Cardinality	E.CC.3. Count forward beginning from a given number (within 10) without reciting all the numbers in sequence (e.g., starting at 5, begin at 5 and say: 6, 7, 8, 9, 10).	Partial	CCS has students count to 10 and by ones and tens; but extension of 10 to 100 and some numbers up to 100 not covered.		26.2 Compare the length, weight and capacity of objects by making direct comparisons with reference objects (e.g., one which object is longer, lighter, bigger, heavier, or holds more).	Measurement and Data	E.MD.2. Compare two measurable attributes of objects, such as length or weight. Describe measurable attributes of a single object.	Yes	
	25.2 Count, recognize, represent, name, and order a number of objects (up to 10).	Counting and Cardinality	E.CC.4. Write number names from 0 to 20. Represent a number of objects with written numerals 0-20 with 0 representing a count of no objects.	Partial	CCS has students count to 20 and by ones and tens; but extension of 10 to 100 and some numbers up to 100 not covered.		26.3 Measure the length, weight and capacity of objects by making direct comparisons with reference objects (e.g., one which object is longer, lighter, bigger, heavier, or holds more).		E.MD.3. Identify measurable attributes of objects, such as length or weight. Describe measurable attributes of a single object.	Yes	
	25.3 Count, recognize, represent, name, and order a number of objects (up to 10).	Counting and Cardinality	E.CC.5. Count forward beginning from a given number (within 10) without reciting all the numbers in sequence (e.g., starting at 5, begin at 5 and say: 6, 7, 8, 9, 10).	Partial	CCS has students count to 10 and by ones and tens; but extension of 10 to 100 and some numbers up to 100 not covered.		26.4 Measure the length, weight and capacity of objects by making direct comparisons with reference objects (e.g., one which object is longer, lighter, bigger, heavier, or holds more).		E.MD.4. Measure the length, weight and capacity of objects by making direct comparisons with reference objects (e.g., one which object is longer, lighter, bigger, heavier, or holds more).	Yes	
	25.4 Count, recognize, represent, name, and order a number of objects (up to 10).	Counting and Cardinality	E.CC.6. Write number names from 0 to 20. Represent a number of objects with written numerals 0-20 with 0 representing a count of no objects.	Partial	CCS has students count to 20 and by ones and tens; but extension of 10 to 100 and some numbers up to 100 not covered.		26.5 Measure the length, weight and capacity of objects by making direct comparisons with reference objects (e.g., one which object is longer, lighter, bigger, heavier, or holds more).		E.MD.5. Measure the length, weight and capacity of objects by making direct comparisons with reference objects (e.g., one which object is longer, lighter, bigger, heavier, or holds more).	Yes	
Strand	CA Math Standard	Domain	Common Core Standard (CCS)	Alignment	Comments in reference to CCS	Strand	CA Math Standard	Domain	Common Core Standard (CCS)	Alignment	Comments in reference to CCS
26 Number Sense	26 Use various strategies to determine the number of objects that are each in two groups. (Use two groups that are each less than 10).	Operations and Algebraic Thinking	E.OA.2. (Circle Number)	Yes		27 Measurement and Geometry	27.1 Measure the length, weight and capacity of objects by making direct comparisons with reference objects (e.g., one which object is longer, lighter, bigger, heavier, or holds more).	Measurement and Data	E.MD.1. Describe and compare measurable attributes. Classify objects into groups according to the name of the attribute. Count the number of objects in each group and compare the groups by using the terms "more than," "less than," and "same amount."	Partial	27.100 (Circle numbers) Tell and write time.
	26.1 Count, recognize, represent, name, and order a number of objects (up to 10).	Counting and Cardinality	E.CC.3. Count forward beginning from a given number (within 10) without reciting all the numbers in sequence (e.g., starting at 5, begin at 5 and say: 6, 7, 8, 9, 10).	Partial	CCS has students count to 10 and by ones and tens; but extension of 10 to 100 and some numbers up to 100 not covered.		27.2 Compare the length, weight and capacity of objects by making direct comparisons with reference objects (e.g., one which object is longer, lighter, bigger, heavier, or holds more).	Measurement and Data	E.MD.2. Compare two measurable attributes of objects, such as length or weight. Describe measurable attributes of a single object.	Yes	
	26.2 Count, recognize, represent, name, and order a number of objects (up to 10).	Counting and Cardinality	E.CC.4. Write number names from 0 to 20. Represent a number of objects with written numerals 0-20 with 0 representing a count of no objects.	Partial	CCS has students count to 20 and by ones and tens; but extension of 10 to 100 and some numbers up to 100 not covered.		27.3 Measure the length, weight and capacity of objects by making direct comparisons with reference objects (e.g., one which object is longer, lighter, bigger, heavier, or holds more).		E.MD.3. Identify measurable attributes of objects, such as length or weight. Describe measurable attributes of a single object.	Yes	
	26.3 Count, recognize, represent, name, and order a number of objects (up to 10).	Counting and Cardinality	E.CC.5. Count forward beginning from a given number (within 10) without reciting all the numbers in sequence (e.g., starting at 5, begin at 5 and say: 6, 7, 8, 9, 10).	Partial	CCS has students count to 10 and by ones and tens; but extension of 10 to 100 and some numbers up to 100 not covered.		27.4 Measure the length, weight and capacity of objects by making direct comparisons with reference objects (e.g., one which object is longer, lighter, bigger, heavier, or holds more).		E.MD.4. Measure the length, weight and capacity of objects by making direct comparisons with reference objects (e.g., one which object is longer, lighter, bigger, heavier, or holds more).	Yes	
	26.4 Count, recognize, represent, name, and order a number of objects (up to 10).	Counting and Cardinality	E.CC.6. Write number names from 0 to 20. Represent a number of objects with written numerals 0-20 with 0 representing a count of no objects.	Partial	CCS has students count to 20 and by ones and tens; but extension of 10 to 100 and some numbers up to 100 not covered.		27.5 Measure the length, weight and capacity of objects by making direct comparisons with reference objects (e.g., one which object is longer, lighter, bigger, heavier, or holds more).		E.MD.5. Measure the length, weight and capacity of objects by making direct comparisons with reference objects (e.g., one which object is longer, lighter, bigger, heavier, or holds more).	Yes	
Strand	CA Math Standard	Domain	Common Core Standard (CCS)	Alignment	Comments in reference to CCS	Strand	CA Math Standard	Domain	Common Core Standard (CCS)	Alignment	Comments in reference to CCS
27 Number Sense	27 Use various strategies to determine the number of objects that are each in two groups. (Use two groups that are each less than 10).	Operations and Algebraic Thinking	E.OA.2. (Circle Number)	Yes		28 Measurement and Geometry	28.1 Measure the length, weight and capacity of objects by making direct comparisons with reference objects (e.g., one which object is longer, lighter, bigger, heavier, or holds more).	Measurement and Data	E.MD.1. Describe and compare measurable attributes. Classify objects into groups according to the name of the attribute. Count the number of objects in each group and compare the groups by using the terms "more than," "less than," and "same amount."	Partial	28.100 (Circle numbers) Tell and write time.
	27.1 Count, recognize, represent, name, and order a number of objects (up to 10).	Counting and Cardinality	E.CC.3. Count forward beginning from a given number (within 10) without reciting all the numbers in sequence (e.g., starting at 5, begin at 5 and say: 6, 7, 8, 9, 10).	Partial	CCS has students count to 10 and by ones and tens; but extension of 10 to 100 and some numbers up to 100 not covered.		28.2 Compare the length, weight and capacity of objects by making direct comparisons with reference objects (e.g., one which object is longer, lighter, bigger, heavier, or holds more).	Measurement and Data	E.MD.2. Compare two measurable attributes of objects, such as length or weight. Describe measurable attributes of a single object.	Yes	
	27.2 Count, recognize, represent, name, and order a number of objects (up to 10).	Counting and Cardinality	E.CC.4. Write number names from 0 to 20. Represent a number of objects with written numerals 0-20 with 0 representing a count of no objects.	Partial	CCS has students count to 20 and by ones and tens; but extension of 10 to 100 and some numbers up to 100 not covered.		28.3 Measure the length, weight and capacity of objects by making direct comparisons with reference objects (e.g., one which object is longer, lighter, bigger, heavier, or holds more).		E.MD.3. Identify measurable attributes of objects, such as length or weight. Describe measurable attributes of a single object.	Yes	
	27.3 Count, recognize, represent, name, and order a number of objects (up to 10).	Counting and Cardinality	E.CC.5. Count forward beginning from a given number (within 10) without reciting all the numbers in sequence (e.g., starting at 5, begin at 5 and say: 6, 7, 8, 9, 10).	Partial	CCS has students count to 10 and by ones and tens; but extension of 10 to 100 and some numbers up to 100 not covered.		28.4 Measure the length, weight and capacity of objects by making direct comparisons with reference objects (e.g., one which object is longer, lighter, bigger, heavier, or holds more).		E.MD.4. Measure the length, weight and capacity of objects by making direct comparisons with reference objects (e.g., one which object is longer, lighter, bigger, heavier, or holds more).	Yes	
	27.4 Count, recognize, represent, name, and order a number of objects (up to 10).	Counting and Cardinality	E.CC.6. Write number names from 0 to 20. Represent a number of objects with written numerals 0-20 with 0 representing a count of no objects.	Partial	CCS has students count to 20 and by ones and tens; but extension of 10 to 100 and some numbers up to 100 not covered.		28.5 Measure the length, weight and capacity of objects by making direct comparisons with reference objects (e.g., one which object is longer, lighter, bigger, heavier, or holds more).		E.MD.5. Measure the length, weight and capacity of objects by making direct comparisons with reference objects (e.g., one which object is longer, lighter, bigger, heavier, or holds more).	Yes	
Strand	CA Math Standard	Domain	Common Core Standard (CCS)	Alignment	Comments in reference to CCS	Strand	CA Math Standard	Domain	Common Core Standard (CCS)	Alignment	Comments in reference to CCS
28 Number Sense	28 Use various strategies to determine the number of objects that are each in two groups. (Use two groups that are each less than 10).	Operations and Algebraic Thinking	E.OA.2. (Circle Number)	Yes		29 Measurement and Geometry	29.1 Measure the length, weight and capacity of objects by making direct comparisons with reference objects (e.g., one which object is longer, lighter, bigger, heavier, or holds more).	Measurement and Data	E.MD.1. Describe and compare measurable attributes. Classify objects into groups according to the name of the attribute. Count the number of objects in each group and compare the groups by using the terms "more than," "less than," and "same amount."	Partial	29.100 (Circle numbers) Tell and write time.
	28.1 Count, recognize, represent, name, and order a number of objects (up to 10).	Counting and Cardinality	E.CC.3. Count forward beginning from a given number (within 10) without reciting all the numbers in sequence (e.g., starting at 5, begin at 5 and say: 6, 7, 8, 9, 10).	Partial	CCS has students count to 10 and by ones and tens; but extension of 10 to 100 and some numbers up to 100 not covered.		29.2 Compare the length, weight and capacity of objects by making direct comparisons with reference objects (e.g., one which object is longer, lighter, bigger, heavier, or holds more).	Measurement and Data	E.MD.2. Compare two measurable attributes of objects, such as length or weight. Describe measurable attributes of a single object.	Yes	
	28.2 Count, recognize, represent, name, and order a number of objects (up to 10).	Counting and Cardinality	E.CC.4. Write number names from 0 to 20. Represent a number of objects with written numerals 0-20 with 0 representing a count of no objects.	Partial	CCS has students count to 20 and by ones and tens; but extension of 10 to 100 and some numbers up to 100 not covered.		29.3 Measure the length, weight and capacity of objects by making direct comparisons with reference objects (e.g., one which object is longer, lighter, bigger, heavier, or holds more).				

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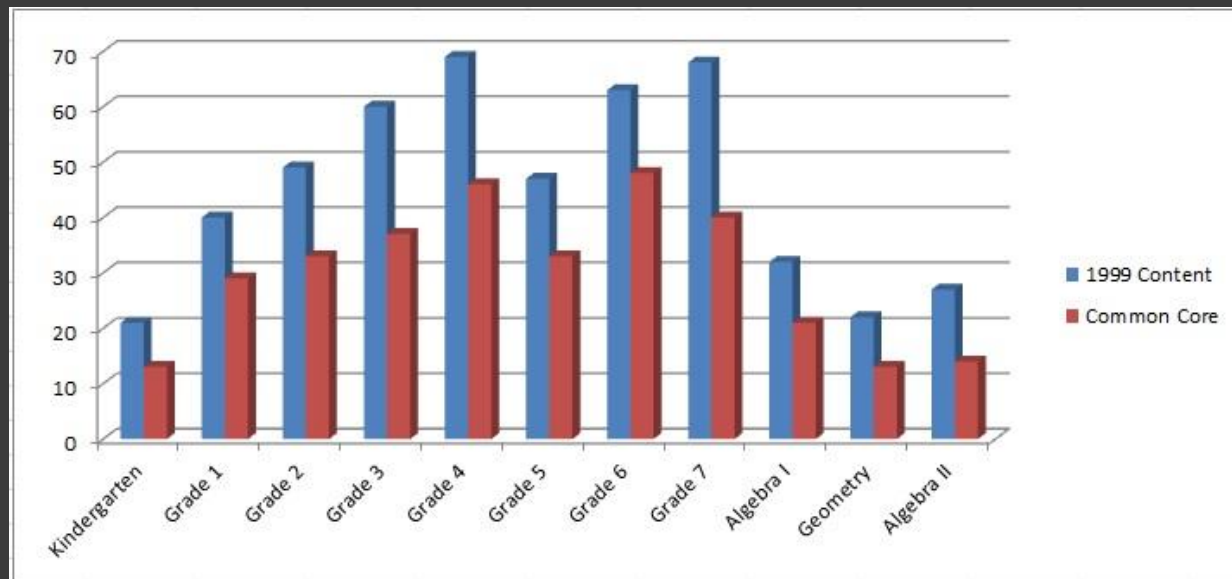
Strand	CA Math Standard	Domain	Common Core Standard (CCS)	Alignment	Comments or references to CCSS
Measurement and Geometry	CA Math Standard				
1.3 Measurement and Geometry	1.3 Students understand that concept of area and units to measure it. They use, understand and compare properties, such as length, weight and capacity, and their comparisons may be made by referring to these properties.	Measurement and Data	R.1.MD.1 Describe and compare measurable attributes. Classify objects as two-dimensional shapes on the basis of number of vertices in each shape and sort the shapes by the number of sides. Classify shapes.	Partial	1.MD.1 Classify two-dimensional shapes
	1.4 Compare the length, weight and capacity of objects by making direct comparisons with reference objects (e.g., how much object is longer, longer, wider, heavier, in both ways).	Measurement and Data	R.1.MD.2 Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object. R.1.MD.3 Directly compare two objects with a measurable attribute in common, to see which object has "more of" of the attribute, and describe the difference.	Yes	
				No	1.MD.1 Tell and write names for basic and half-hour using analog and digital clocks.
				No	
				No	1.MD.1 Tell and write names for hours and half-hour using analog and digital clocks.
2.3 Measurement and Geometry	2.3 Students identify common objects in their environment and describe the two-dimensional shapes.	Geometry	R.G.1 Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, ovals, octagons, etc.) in the environment.	Yes	
Strand	CA Math Standard	Domain	Common Core Standard (CCS)	Alignment	Comments or references to CCSS
	1.4 Identify and describe geometric objects (e.g., circle, triangle, square, rectangle, cube, sphere, cone).	Geometry	R.G.1.1 Categorize name shapes regardless of their orientation or overall size. R.G.1.2 Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices, "faces" and other attributes) by joining side of equal lengths.	Yes	
Strand	CA Math Standard				
Statistics, Data Analysis, and Probability				No	1.MD.1 Classify (formal) shapes and interpret data.
1.5 Statistics, Data Analysis, and Probability				No	1.MD.1.1 Organize, represent, and interpret data with up to three categories, ask and answer questions about the total number of data points, how many in each category, and how many more or less in each category than in another.
					CCSS have not yet been properly accepted in the Maharashtra Textbook Standards. Mathematically proficient students look closely to describe patterns in functions (in problem solving).

First Grade Math Standards

Analysis of California Mathematics standards to Common Core standards-Grade 1

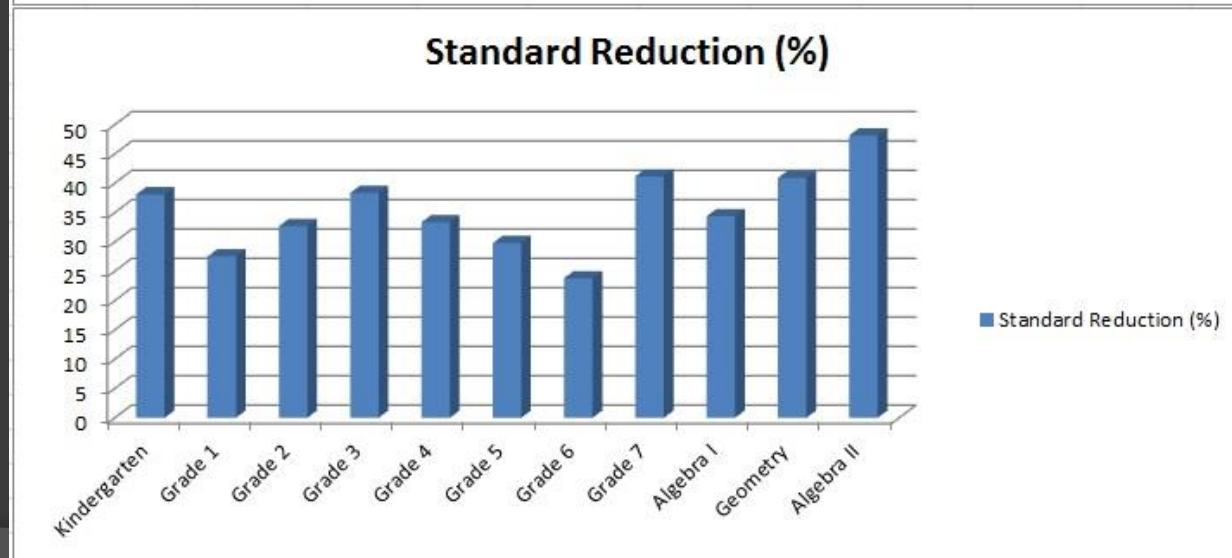
Analysis of California Mathematics standards to Common Core standards-Grade 1										Analysis of California Mathematics standards to Common Core standards-Grade 1									
Strand	CA Math Standard	Domain	Common Core Standard (CCS)	Alignment	Comments in reference to CCS	Strand	CA Math Standard	Domain	Common Core Standard (CCS)	Alignment	Comments in reference to CCS	Strand	CA Math Standard	Domain	Common Core Standard (CCS)	Alignment	Comments in reference to CCS		
1.0 Number Sense	1.1 Student understands and can number up to 100.	Number and Operations in Base Ten	1.NBT.1. Count to 120, starting at any number less than 120. In this range, he reads and understands the meaning of the numbers 11 and 100.	Yes		1.0 Number Sense	1.1 Student understands and can number up to 100.	Number and Operations in Base Ten	1.NBT.1. Count to 120, starting at any number less than 120. In this range, he reads and understands the meaning of the numbers 11 and 100.	Yes		1.0 Number Sense	1.1 Student understands and can number up to 100.	Number and Operations in Base Ten	1.NBT.1. Count to 120, starting at any number less than 120. In this range, he reads and understands the meaning of the numbers 11 and 100.	Yes			
	1.2 Compare and order whole numbers to 100 by using the symbols <, =, and >.	Number and Operations in Base Ten	1.NBT.2. Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols <, =, and >.	Yes		1.2 Compare and order whole numbers to 100 by using the symbols <, =, and >.	1.2 Compare and order whole numbers to 100 by using the symbols <, =, and >.	Number and Operations in Base Ten	1.NBT.2. Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols <, =, and >.	Yes		1.2 Compare and order whole numbers to 100 by using the symbols <, =, and >.	1.2 Compare and order whole numbers to 100 by using the symbols <, =, and >.	Number and Operations in Base Ten	1.NBT.2. Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols <, =, and >.	Yes			
	1.3 Represent equivalent fractions of the same number through the use of different shapes.	Operations and Algebraic Thinking	1.OA.4. Add and subtract within 20. Answering questions like: "There are 10 apples on the table. I ate 2 apples. How many apples are left?" by using objects, drawings, and equations (e.g., 10 - 2 = 8).	Yes		1.3 Represent equivalent fractions of the same number through the use of different shapes.	1.3 Represent equivalent fractions of the same number through the use of different shapes.	Operations and Algebraic Thinking	1.OA.4. Add and subtract within 20. Answering questions like: "There are 10 apples on the table. I ate 2 apples. How many apples are left?" by using objects, drawings, and equations (e.g., 10 - 2 = 8).	Yes		1.3 Represent equivalent fractions of the same number through the use of different shapes.	1.3 Represent equivalent fractions of the same number through the use of different shapes.	Operations and Algebraic Thinking	1.OA.4. Add and subtract within 20. Answering questions like: "There are 10 apples on the table. I ate 2 apples. How many apples are left?" by using objects, drawings, and equations (e.g., 10 - 2 = 8).	Yes			
	1.4 Count and group objects in tens and ones (e.g., three groups of 10 and 4 objects, 34, or 40).	Number and Operations in Base Ten	1.NBT.2. Understand that the two-digit number 10 represents ten ones (e.g., three groups of 10 and 4 objects, 34, or 40).	Yes		1.4 Count and group objects in tens and ones (e.g., three groups of 10 and 4 objects, 34, or 40).	1.4 Count and group objects in tens and ones (e.g., three groups of 10 and 4 objects, 34, or 40).	Number and Operations in Base Ten	1.NBT.2. Understand that the two-digit number 10 represents ten ones (e.g., three groups of 10 and 4 objects, 34, or 40).	Yes		1.4 Count and group objects in tens and ones (e.g., three groups of 10 and 4 objects, 34, or 40).	1.4 Count and group objects in tens and ones (e.g., three groups of 10 and 4 objects, 34, or 40).	Number and Operations in Base Ten	1.NBT.2. Understand that the two-digit number 10 represents ten ones (e.g., three groups of 10 and 4 objects, 34, or 40).	Yes			
2.0 Number Sense	2.1 Student understands the meaning of addition and subtraction and can solve problems with these operations.	Number and Operations in Base Ten	1.OA.1. Represent and solve problems involving addition and subtraction. Answering questions like: "There are 10 apples on the table. I ate 2 apples. How many apples are left?" by using objects, drawings, and equations (e.g., 10 - 2 = 8).	Yes		2.0 Number Sense	2.1 Student understands the meaning of addition and subtraction and can solve problems with these operations.	Number and Operations in Base Ten	1.OA.1. Represent and solve problems involving addition and subtraction. Answering questions like: "There are 10 apples on the table. I ate 2 apples. How many apples are left?" by using objects, drawings, and equations (e.g., 10 - 2 = 8).	Yes		2.0 Number Sense	2.1 Student understands the meaning of addition and subtraction and can solve problems with these operations.	Number and Operations in Base Ten	1.OA.1. Represent and solve problems involving addition and subtraction. Answering questions like: "There are 10 apples on the table. I ate 2 apples. How many apples are left?" by using objects, drawings, and equations (e.g., 10 - 2 = 8).	Yes			
	2.2 Know the addition facts (sums to 20) and the corresponding subtraction facts (differences to 20).	Number and Operations in Base Ten	1.OA.2. Fluently add and subtract within 20 using mental strategies. By end of Grade 2, know from memory all sums of two one-digit numbers.	Yes		2.2 Know the addition facts (sums to 20) and the corresponding subtraction facts (differences to 20).	2.2 Know the addition facts (sums to 20) and the corresponding subtraction facts (differences to 20).	Number and Operations in Base Ten	1.OA.2. Fluently add and subtract within 20 using mental strategies. By end of Grade 2, know from memory all sums of two one-digit numbers.	Yes		2.2 Know the addition facts (sums to 20) and the corresponding subtraction facts (differences to 20).	2.2 Know the addition facts (sums to 20) and the corresponding subtraction facts (differences to 20).	Number and Operations in Base Ten	1.OA.2. Fluently add and subtract within 20 using mental strategies. By end of Grade 2, know from memory all sums of two one-digit numbers.	Yes			
	2.3 Identify one more than, one less than, 10 more than, and 10 less than a given number.	Number and Operations in Base Ten	1.OA.3. Add and subtract within 20. Answering questions like: "There are 10 apples on the table. I ate 2 apples. How many apples are left?" by using objects, drawings, and equations (e.g., 10 - 2 = 8).	Yes		2.3 Identify one more than, one less than, 10 more than, and 10 less than a given number.	2.3 Identify one more than, one less than, 10 more than, and 10 less than a given number.	Number and Operations in Base Ten	1.OA.3. Add and subtract within 20. Answering questions like: "There are 10 apples on the table. I ate 2 apples. How many apples are left?" by using objects, drawings, and equations (e.g., 10 - 2 = 8).	Yes		2.3 Identify one more than, one less than, 10 more than, and 10 less than a given number.	2.3 Identify one more than, one less than, 10 more than, and 10 less than a given number.	Number and Operations in Base Ten	1.OA.3. Add and subtract within 20. Answering questions like: "There are 10 apples on the table. I ate 2 apples. How many apples are left?" by using objects, drawings, and equations (e.g., 10 - 2 = 8).	Yes			
	2.4 Count by 5s, 10s, and 100s.	Counting and Cardinality	1.OA.4. Add and subtract within 20. Answering questions like: "There are 10 apples on the table. I ate 2 apples. How many apples are left?" by using objects, drawings, and equations (e.g., 10 - 2 = 8).	Yes		2.4 Count by 5s, 10s, and 100s.	2.4 Count by 5s, 10s, and 100s.	Counting and Cardinality	1.OA.4. Add and subtract within 20. Answering questions like: "There are 10 apples on the table. I ate 2 apples. How many apples are left?" by using objects, drawings, and equations (e.g., 10 - 2 = 8).	Yes		2.4 Count by 5s, 10s, and 100s.	2.4 Count by 5s, 10s, and 100s.	Counting and Cardinality	1.OA.4. Add and subtract within 20. Answering questions like: "There are 10 apples on the table. I ate 2 apples. How many apples are left?" by using objects, drawings, and equations (e.g., 10 - 2 = 8).	Yes			
3.0 Number Sense	3.1 Student understands the meaning of addition and subtraction and can solve problems with these operations.	Number and Operations in Base Ten	1.OA.1. Represent and solve problems involving addition and subtraction. Answering questions like: "There are 10 apples on the table. I ate 2 apples. How many apples are left?" by using objects, drawings, and equations (e.g., 10 - 2 = 8).	Yes		3.0 Number Sense	3.1 Student understands the meaning of addition and subtraction and can solve problems with these operations.	Number and Operations in Base Ten	1.OA.1. Represent and solve problems involving addition and subtraction. Answering questions like: "There are 10 apples on the table. I ate 2 apples. How many apples are left?" by using objects, drawings, and equations (e.g., 10 - 2 = 8).	Yes		3.0 Number Sense	3.1 Student understands the meaning of addition and subtraction and can solve problems with these operations.	Number and Operations in Base Ten	1.OA.1. Represent and solve problems involving addition and subtraction. Answering questions like: "There are 10 apples on the table. I ate 2 apples. How many apples are left?" by using objects, drawings, and equations (e.g., 10 - 2 = 8).	Yes			
	3.2 Know the addition facts (sums to 20) and the corresponding subtraction facts (differences to 20).	Number and Operations in Base Ten	1.OA.2. Fluently add and subtract within 20 using mental strategies. By end of Grade 2, know from memory all sums of two one-digit numbers.	Yes		3.2 Know the addition facts (sums to 20) and the corresponding subtraction facts (differences to 20).	3.2 Know the addition facts (sums to 20) and the corresponding subtraction facts (differences to 20).	Number and Operations in Base Ten	1.OA.2. Fluently add and subtract within 20 using mental strategies. By end of Grade 2, know from memory all sums of two one-digit numbers.	Yes		3.2 Know the addition facts (sums to 20) and the corresponding subtraction facts (differences to 20).	3.2 Know the addition facts (sums to 20) and the corresponding subtraction facts (differences to 20).	Number and Operations in Base Ten	1.OA.2. Fluently add and subtract within 20 using mental strategies. By end of Grade 2, know from memory all sums of two one-digit numbers.	Yes			
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	3.4 Count by 5s, 10s, and 100s.	Counting and Cardinality	1.OA.4. Add and subtract within 20. Answering questions like: "There are 10 apples on the table. I ate 2 apples. How many apples are left?" by using objects, drawings, and equations (e.g., 10 - 2 = 8).	Yes		3.4 Count by 5s, 10s, and 100s.	3.4 Count by 5s, 10s, and 100s.	Counting and Cardinality	1.OA.4. Add and subtract within 20. Answering questions like: "There are 10 apples on the table. I ate 2 apples. How many apples are left?" by using objects, drawings, and equations (e.g., 10 - 2 = 8).	Yes		3.4 Count by 5s, 10s, and 100s.	3.4 Count by 5s, 10s, and 100s.	Counting and Cardinality	1.OA.4. Add and subtract within 20. Answering questions like: "There are 10 apples on the table. I ate 2 apples. How many apples are left?" by using objects, drawings, and equations (e.g., 10 - 2 = 8).	Yes			
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1999 Standards Removed



Median
Percentage of
Standards
Removed

Standard Reduction (%)



34%

Increased Focus on Key Content

- No longer “an inch deep and a mile wide”
- The remaining 1999 standards have been expanded upon, and greater depth in content instruction is expected

Increased Depth – 6th Grade Standards

1999

CC

1999

CC

1.2 Write and evaluate an algebraic expression for a given situation, using up to three variables.	Expressions and Equations	<p>6.EE.-2: Write, read, and evaluate expressions in which letters stand for numbers.</p> <p>6.EE.-2a: Write expressions that record operations with numbers and with letters standing for numbers.</p> <p>6.EE.-2b: Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity.</p> <p>6.EE.2c: Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations).</p>	1.4 Solve problems manually by using the correct order of operations or by using a scientific calculator.	Expressions and Equations	<p>6.EE.2: Write, read, and evaluate expressions in which letters stand for numbers.</p> <p>6.EE.2a: Write expressions that record operations with numbers and with letters standing for numbers.</p> <p>6.EE.2b: Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity.</p> <p>6.EE.2c: Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations).</p> <p>6.EE.3: Apply the properties of operations to generate equivalent expressions.</p>
1.3 Apply algebraic order of operations and the commutative, associative, and distributive properties to evaluate expressions, and justify each step in the process.	Expressions and Equations	<p>6.EE.1: Write and evaluate numerical expressions involving whole-number exponents.</p> <p>6.EE.2: Write, read, and evaluate expressions in which letters stand for numbers.</p> <p>6.EE.2a: Write expressions that record operations with numbers and with letters standing for numbers.</p> <p>6.EE.2b: Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity.</p> <p>6.EE.2c: Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations).</p> <p>6.EE.3: Apply properties of operations to generate equivalent expression.</p> <p>6.EE.4: Identify when two expressions are equivalent (i.e., when the two expression name the same number regardless of which value is substituted into them.)</p>	2.0 Students analyze and use tables, graphs, and rules to solve problems involving rates and proportions.	Ratio and Proportional Relationships	<p>6.RP. (Cluster statement) Understand ratio concepts and use ratio reasoning to solve problems.</p> <p>6.RP.3: Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.</p> <p>6.RP.3a: Make tables of equivalent ratios relating quantities with whole number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios.</p> <p>6.RP.3b: Solve unit rate problems including those involving unit pricing and constant speed.</p> <p>6.RP.3c: Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part and the percent.</p> <p>6.RP.3d: Use ratio reasoning of a quantity to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.</p>
	Mathematical Practices	6.MP: Construct valid arguments and critique the reasoning of others.			

Increased Depth – 6th Grade Standards

1999

CC

1999

CC

1999

CC

1999

CC

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1.3 Apply algebraic order of operations and the commutative, associative, and distributive properties to evaluate expressions, and justify each step in the process.	Expressions and Equations	<p>6.EE-1: Write and evaluate numerical expressions involving whole-number exponents.</p> <p>6.EE-2: Write, read, and evaluate expressions in which letters stand for numbers.</p> <p>6.EE-2a: Write expressions that record operations with numbers and with letters standing for numbers.</p> <p>6.EE-2b: Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity.</p> <p>6.EE-2c: Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations).</p> <p>6.EE-3: Apply properties of operations to generate equivalent expressions.</p> <p>6.EE-4: Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them.)</p>	2.0 Students analyze and use tables, graphs, and rules to solve problems involving rates and proportions.	Ratio and Proportional Relationships	<p>6.EE-3: Apply the properties of operations to generate equivalent expressions.</p> <p>6.RP-1: Understand ratio concepts and use ratio reasoning to solve problems.</p> <p>6.RP-2: Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.</p> <p>6.RP-3a: Make tables of equivalent ratios relating quantities with whole number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios.</p> <p>6.RP-3b: Solve unit rate problems including those involving unit pricing and constant speed.</p> <p>6.RP-3c: Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part and the percent.</p> <p>6.RP-3d: Use ratio reasoning of a quantity to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.</p>
	Mathematical Practices	6.MP: Construct valid arguments and critique the reasoning of others.			

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	Mathematical Practices	6.MP: Construct valid arguments and critique the reasoning of others.			

Standards of Mathematical Practice

- ◎ The second layer of increased depth comes with a skill-based curriculum
- ◎ Students will be expected to apply mathematical content to real world situations using real world tools

Standards of Mathematical Practice



How could teachers help teach these skills?

In your table groups, identify two possible instructional shifts for each of these standards. They can be general, or specific.

Choose a spokesperson, and we'll do a share-out in two songs!

Committee Responses 1-4

(not part of original presentation)

1. Make sense of problems and persevere in solving them.
 - Spend time on the *concept*
 - Teach students to persevere – they often either get stuck or just want a quick answer
 - Teach students to not just guess when they get frustrated
 - Have students share answers to the problem and discuss them
2. Reason abstractly and quantitatively.
 - Understand origin of formula along with memorization of formula
 - Use manipulatives
3. Construct viable arguments and critique the reasoning of others
 - Share out answers and *discuss*
 - Use social media to have students comment
 - It's difficult for small children to argue their side
 - Discuss why two correct answers can exist and examine each other's work
4. Model with mathematics
 - Real life application
 - Answer “why do we do this?”
 - Use manipulatives

Committee Responses 5-8

(not part of original presentation)

5. Use appropriate tools strategically.

- Use manipulatives in groups
- Rulers, measuring tape, measuring cups/spoons
- Technology Tools (iPad, scientific calculator)
- Use estimation
- Teaching tools – teachers use tools as well

6. Attend to precision.

- Use correct language
- Give complete and concise answers with correct labels
- Use appropriate academic vocabulary to communicate thought process

7. Look for and make use of structure.

- Notice patterns and structure
- Notice relationships

8. Look for and express regularity in repeated reasoning.

- Recognize repetition in solutions and explain the patterns
- Develop shortcuts

Identify Necessary Instructional Shifts

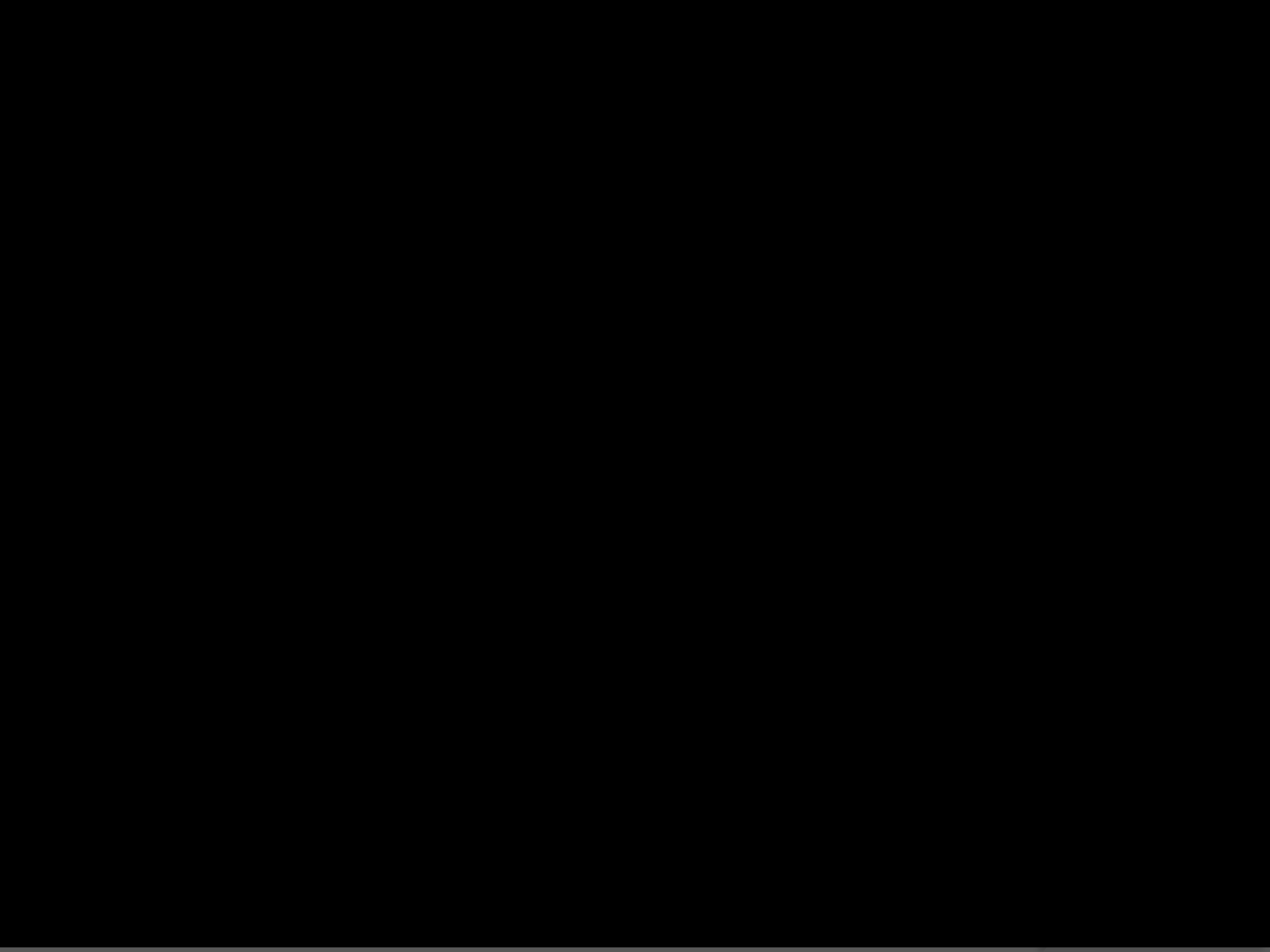
The Common Core will demand a very different pedagogy for our students to perform well

Common Core Foci

- Process and Reasoning
- Argument and Explanation
- Modeling and Tools

Standards Check

- Watch the following lessons involving the laws of quadrilaterals.
- Give each lesson a grade, from **A through F**, for how well it addresses each of the Mathematical Standards of Practice.



Group Check

Discuss with your group – how well did this lesson address each of the Mathematical Standards of Practice?

We'll do a whip-around for each standard after two songs play, so make sure to select a spokesperson!

Standards Check - Continued

- ◎ <https://www.teachingchannel.org/videos/geometry-lesson-quadrilaterals>
- ◎ Follow the same process with this lesson – how well does it address each of these standards?

Group Check

Discuss with your group – how well did this lesson address each of the Mathematical Standards of Practice?

We'll do a whip-around for each standard after two songs play, so make sure to select a spokesperson!

Elementary and Secondary Roles

Elementary

- Research Smarter Balanced math assessments and create grade level elementary assessments.

Secondary

- Research Integrated and Traditional secondary math pathways, as well as accelerated pathways.
- Make recommendation to the District on which pathways to use.

Whole Committee Decision

Math Technology Recommendation

Which technology tools fit these proposed instructional and assessment shifts best?

Expand Current Labs?



Expand ActivBoard and Student Response System?



Expand or Adopt Student Devices?



Common Core Math Transition Plan

- All the recommendations this Committee makes will be included in this document
- The goal is to make this a clear, focused, and actionable document that can guide the future of math in SGUSD.

Thanks For All Your Work!

- ◎ We will meet again after LACOE trainings.
 - JMS: Oct. 8, 9, 18
 - GHS: Nov. 7, 8, 15
 - K-2: Jan. 13, 14, 24
 - 3-5: Feb. 4, 5, 24
- ◎ I will e-mail a link to this PowerPoint and handouts to all of you. They will all be posted on the SGUSD Digital Community website.
- ◎ Please do your best to keep your departments, grade levels, and sites informed!

Any Final Comments or
Questions?