3-5 Mathematics

High Priority Standards

3	4	5
Numeration	**Numeration**	**Numeration**
A1.2.1 •read, write, model, and count with positive whole numbers to 10,000	A1.2.1 •read, write, model, and count with positive whole numbers to 1,000,000	A1.2.5 •model and explain the process of adding and subtracting fractions with common denominators and decimals that represent money
A1.2.2 •use and model place value positions from 1 to 10,000	A1.2.2 •use and model place value positions from 0.01 to 100,000	A1.2.6 •identify and describe factors and multiples including those factors and multiples common to a pair or set of numbers
A1.2.3 •model and explain the process of multiplication; describe the relationships between multiplication and addition	A1.2.3 •model and explain the process of multiplication and division; describe the relationships among the four operations	**Estimation and Computation**
A1.2.5 •model and explain the process of adding and subtracting decimals that represent money including discussion of possible combinations of coins and bills to equal amounts	**Estimation and Computation**	A 3.2.1 •describe and use a variety of estimation strategies (e.g., round the appropriate place value, multiply by powers of 10, use front-end estimation) to check the reasonableness of solutions
Estimation and Computation	A3.2.1 •estimate by rounding to the nearest ten, hundred, or thousand	A 3.2.3 •add and subtract fractions with common denominators to 12 and decimals (including money amounts (using models and algorithms; add and subtract any whole number with carrying and borrowing
A3.2.1 •estimate by rounding to the nearest ten or hundred	A3.2.2 •recall and use basic multiplication and division facts orally, on a written timed test, and as missing factors (3.4.6.7.8.9)	A 3.2.4 •multiply and divide multi-digit whole numbers by 2-digit numbers •multiply and divide decimals that represent money by whole numbers
A3.2.2 •recall basic multiplication facts (0,1,2,5,10) with paper and pencil	A3.2.3 •subtract decimals with money •subtract three-digit whole numbers with trading and regrouping (carrying and borrowing)	A 3.2.5 •find equivalent fractions (convert between fractions and mixed numbers) •recognize fractional forms of commonly used decimals
A3.2.3 •add and subtract money using models and algorithms •add and subtract three-digit whole numbers with trading and regrouping (carrying and borrowing)	A3.2.4 •multiply decimals that represent money by whole numbers; multiply multi-digit whole numbers by two-digit numbers	**Functions and Relationships**
A3.2.4 •model division as "sharing equally" and grouping objects	A3.2.5 •model fractions up to and including tenths (e.g., money)	A4.2.4 •use words, lists, and tables to represent and analyze patterns
Functions and Relationships	**Measurement**	A4.2.5 •write and solve one-step equations with variables; begin to construct number sentences
A4.2.2 •generate and solve simple functions by identifying and applying addition and subtraction patterns	A2.2.1 •estimate and measure weights, lengths, volume and temperatures to the nearest unit using the **standard** system •estimate and measure weights, lengths, volumes and temperatures to the nearest unit using the **metric** system	**Measurement**
A4.2.5 •complete open space sentences with missing numbers using appropriate vocabulary (e.g., >,<, =)	A2.2.2 •identify and use equivalent measurements (e.g., 60 minutes = 1 hour, 7 days = 1 week)	A2.2.1 •estimate and measure weights, lengths, volume and temperatures to the nearest unit using the **standard** system •estimate and measure weights, lengths, volumes and temperatures to the nearest unit using the **metric** system A2.2.2 •identify and use equivalent measurements (e.g. 60 minutes = 1 hour, 7 days = 1 week

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Measurement A2.2.1 •estimate and measure weights, lengths, and temperatures to the nearest unit using the **standard** system	A2.2.5 •tell time using analog and digital clocks identifying AM and PM, find elapsed time	**Geometry** A5.2.4 •distinguish between area and perimeter, finding both using a variety of methods including rules, grid paper, tiles, and formulas
A2.2.2 •identify and use equivalent measurements (e.g., 60 minutes =1 hour, 7 days = 1 week	A2.2.6 •read, write and use money notation, determining possible combinations of coins and bills to equal given amounts; count correct change from ten dollars	A5.2.7 •sketch and identify line segments, midpoint, intersections, parallel, and perpendicular lines
A2.2.3 •use calendars to measure time	**Geometry** A5.2.1 •identify, classify, and compare various triangles and quadrilaterals (polygons) according to their sides and/or angles	**Statistics and Probability** A6.2.6 •conduct simple probability experiments using concrete materials and represent the results using fractions and probability
A2.2.5 •tell time to 5 minutes using analog clocks identifying AM and PM, and recognize equivalent times (e.g. 10:50="ten to eleven")	A5.2.3 •identify and model geometric figures that are congruent, similar, and/or symmetrical	**Problem Solving** B1.2.1 •read and summarize a problem, using mathematical terms and symbols
Geometry A5.2.1 •identify, classify, and compare various triangles and quadrilaterals (polygons) according to their sides and/or angles	A5.2.7 •sketch and identify line segments, midpoint, intersections, parallel, and perpendicular lines	B1.2.2 •select and apply a variety of strategies to solve a problem: guess and check, making a table, chart or list, drawing pictures, making a model, comparing with previous experience
A5.2.2 •compare and contrast plane and solid figures (e.g., circle/sphere, square/cube, triangle/pyramid) using relevant attributes, including the number of vertices, edges, and the number and shape of faces	**Statistics and Probability** A6.2.1 •collect, organize, and display data creating a variety of visual displays (e.g., tables, charts and line graphs)	**Communication** C1.2.2 •represent mathematical and practical situations using concrete, pictorial, and symbolic representations (e.g., write a number sentence from a word problem)
Statistics and Probability A6.2.1 •collect, organize, and display data creating a variety of visual displays (e.g., tables, charts, line graphs)	**Problem Solving** B1.2.1 •read and summarize a problem, using mathematical terms and symbols	C1.2.3 •organize and communicate effectively mathematical problem strategies and solutions to problems
Problem Solving B1.2.1 •read and summarize a problem, using mathematical terms and symbols	B1.2.2 •select and apply a variety of strategies to solve a problem: guess and check, making a table, chart or list, drawing pictures, making a model, comparing with previous experience	**Reasoning** D1.2.3 •justify answers and mathematical strategies as reasonable
B1.2.2 •select and apply a variety of strategies to solve a problem: guess and check, making a table, chart or list, drawing pictures, making a model, comparing with previous experience	**Reasoning** D1.2.1 •draw logical conclusions about mathematical situations	
Reasoning D1.2.1 •draw logical conclusions about mathematical situations	D1.2.3 •justify answers and mathematical strategies as reasonable	
D1.2.3 •justify answers and mathematical strategies as reasonable		

Typical Classroom Assessments		
3	***4***	***5***
• math textbook pre- and post-tests • math textbook chapter tests • teacher-made skill tests • graphing survey • math folders • standards checklist • Puddle Question	• criteria checklists • scored work (practice assignments and projects) • teacher-made pre- and post-unit tests • daily/weekly computation tests • daily drills • weekly quizzes • weekly problem solving activity with rubric • homework • calendar pattern observation notes • measurement performance test • model building	• teacher-made and commercial pre- and post- unit tests • teacher observation using checklist • daily/weekly computation tests • daily drills • weekly problem solving activity using grade level problems (chosen by committee) • scale model house building • California Dept. of Ed. "Brownie" fractions unit

Formal School District and State Assessments		
3	***4***	***5***
• Math Facts Time Tests • Computation Test • Math Standards Inventory • Problem Solving Assessment • Alaska Benchmark Exam	• Math Facts Time Tests • Computation Test • Math Standards Inventory • Problem Solving Assessment • CAT Test	• Math Facts Time Tests • Computation Test • Math Standards Inventory • Problem Solving Assessment • Terra Nova

Major Thematic Strands and/or Instructional Units		
3	***4***	***5***
•**Numeration** (Standards A1.2.1 to A1.2.7) •**Estimation and Computation** (Standards A3.2.1 to A3.2.6) •**Functions and Relationships** (Standards A4.2.1 to A4.2.5) •**Measurement** (Standards A2.2.1 to A2.2.6) •**Geometry** (Standards A5.2.1 to A5.2.7) •**Statistics and Probability** (Standards A6.2.1 to A6.2.6) •**Problem Solving** (Standards B1.2.1 to B1.2.3) •**Reasoning** (Standards D1.2.1 to D1.2.3) •**Communication** (Standards C1.2.1 to C1.2.3) •**Connections** (Standards E1.2.1 to E1.2.2)	•**Numeration** (Standards A1.2.1 to A1.2.7) •**Estimation and Computation** (Standards A3.2.1 to A3.2.6) •**Functions and Relationships** (Standards A4.2.1 to A4.2.5) •**Measurement** (Standards A2.2.1 to A2.2.6) •**Geometry** (Standards A5.2.1 to A5.2.7) •**Statistics and Probability** (Standards A6.2.1 to A6.2.6) •**Problem Solving** (Standards B1.2.1 to B1.2.3) •**Reasoning** (Standards D1.2.1 to D1.2.3) •**Communication** (Standards C1.2.1 to C1.2.3) •**Connections** (Standards E1.2.1 to E1.2.2)	•**Numeration** (Standards A1.2.1 to A1.2.7) •**Estimation and Computation** (Standards A3.2.1 to A3.2.6) •**Functions and Relationships** (Standards A4.2.1 to A4.2.5) •**Measurement** (Standards A2.2.1 to A2.2.6) •**Geometry** (Standards A5.2.1 to A5.2.7) •**Statistics and Probability** (Standards A6.2.1 to A6.2.6) •**Problem Solving** (Standards B1.2.1 to B1.2.3) •**Reasoning** (Standards D1.2.1 to D1.2.3) •**Communication** (Standards C1.2.1 to C1.2.3) •**Connections** (Standards E1.2.1 to E1.2.2)

Integration of Technology		
3	***4***	***5***
● use calculators when appropriate ● use computer programs to reinforce mathematical skills	● use calculators when appropriate ● use computer program to compile data and generate graphs	● use calculators when appropriate ● use computer program to compile data and generate/analyze graphs ● use Internet sites as sources of Problems of the Week