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Correlations to California Mathematics Content Standards for Third Grade

Math Together™ is a research-based tutoring intervention that aligns with NCTM standards and teaches all five content strands (numeration, measurement, algebra, geometry and data analysis). The interdisciplinary approach combines mathematics, social studies and language arts, placing problem solving in context and enhancing reading and writing skills.

Math Together also significantly addresses the five strands of the California Mathematics Content Standards. The program is especially strong in the area of Mathematical Reasoning, with an extremely high correlation to that standard. Tutees learn to make decisions about how to approach problems and how to use strategies, skills and concepts to find solutions. Questions prompt tutees to generalize and extend their understanding to new problems, and to word problems they develop themselves. Tutees (and cross-age tutors) gain fact mastery and computational skills as they develop into confident mathematicians, problem solvers and critical thinkers. The following data show where the California Mathematics Content Standards are incorporated into the 30 lessons of Math Together.

Mathematical Reasoning

1.0 Students make decisions about how to approach problems:

- 1.1 Analyze problems by identifying relationships, distinguishing relevant from irrelevant information, sequencing and prioritizing information, and observing patterns.
- 1.2 Determine when and how to break a problem into simpler parts.

2.0 Students use strategies, skills and concepts in finding solutions:

- 2.1 Use estimation to verify the reasonableness of calculated results.
- 2.2 Apply strategies and results from simpler problems to more complex problems.
- 2.3 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams and models, to explain mathematical reasoning.
- 2.4 Express the solution clearly and logically by using the appropriate mathematical notation and terms in clear language; support solutions with evidence in both verbal and symbolic work.
- 2.5 Indicate the relative advantages of exact and approximate solutions to problems and give answers to a specified degree of accuracy.
- 2.6 Make precise calculations and check the validity of the results from the context of the problem.

3.0 Students move beyond the particular problem by generalizing to other situations:

- 3.1 Evaluate the reasonableness of the solution in the context of the original situation.
- 3.2 Note the method of deriving the solution and demonstrate a conceptual understanding of the derivation by solving similar problems.
- 3.3 Develop generalizations of the results obtained and apply them to other circumstances.

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Correlations to California Mathematics Content Standards for Third Grade

Algebra and Functions

1.0 Students select appropriate symbols, operations, and properties to represent, describe, simplify, and solve simple number relationships:

1.1 Represent relationships of quantities in the form of mathematical expressions, equations, or inequalities.

1.2 Solve problems involving numeric equations or inequalities.

1.3 Select appropriate operational and relational symbols to make an expression true (e.g., if 4 __ 3 = 12, what operational symbol goes in the blank?).

1.4 Express simple unit conversions in symbolic form (e.g., __ inches = __ feet x 12).

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 $7 \times 3 \times 5$?).

2.0 Students represent simple functional relationships:

2.1 Solve simple problems involving a functional relationship between two quantities (e.g., find the total cost of multiple items given the cost per unit).

2.2 Extend and recognize a linear pattern by its rules (e.g., the number of legs a given number of horses may be calculated by counting by 4s or by multiplying the number of horses by 4).

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
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Correlations to California Mathematics Content Standards for Third Grade

Number Sense

1.0 Students understand the place value of whole numbers:

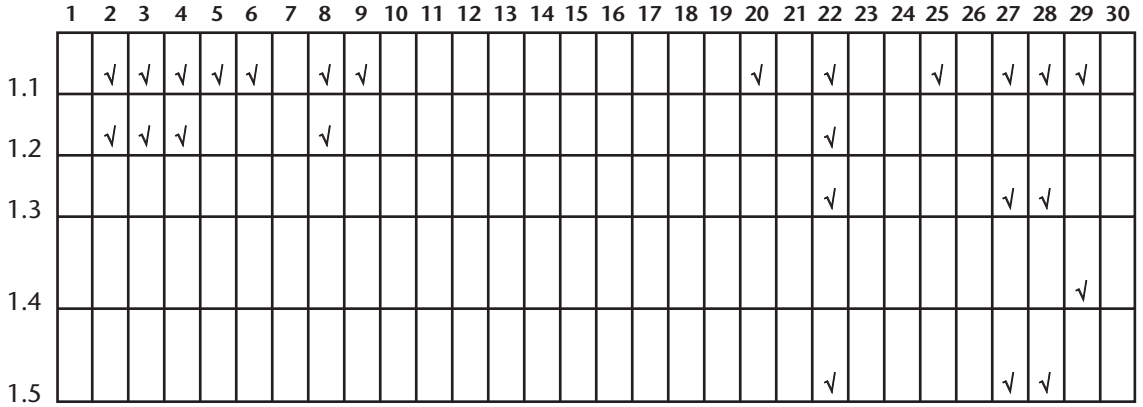
1.1 Count, read, and write whole numbers to 10,000.

1.2 Compare and order whole numbers to 10,000.

1.3 Identify the place value for each digit in numbers to 10,000.

1.4 Round off numbers to 10,000 to the nearest ten, hundred, and thousand.

1.5 Use expanded notation to represent numbers (e.g., 3,206 = 3,000 + 200 + 6).



2.0 Students calculate and solve problems involving addition, subtraction, multiplication, and division:

2.1 Find the sum or difference of two whole numbers between 0 and 10,000.

2.2 Memorize to automaticity the multiplication table for numbers between 1 and 10.

2.3 Use the inverse relationship of multiplication and division to compute and check results. It seems like it would be easy to address 2.3 with the fact family cards.

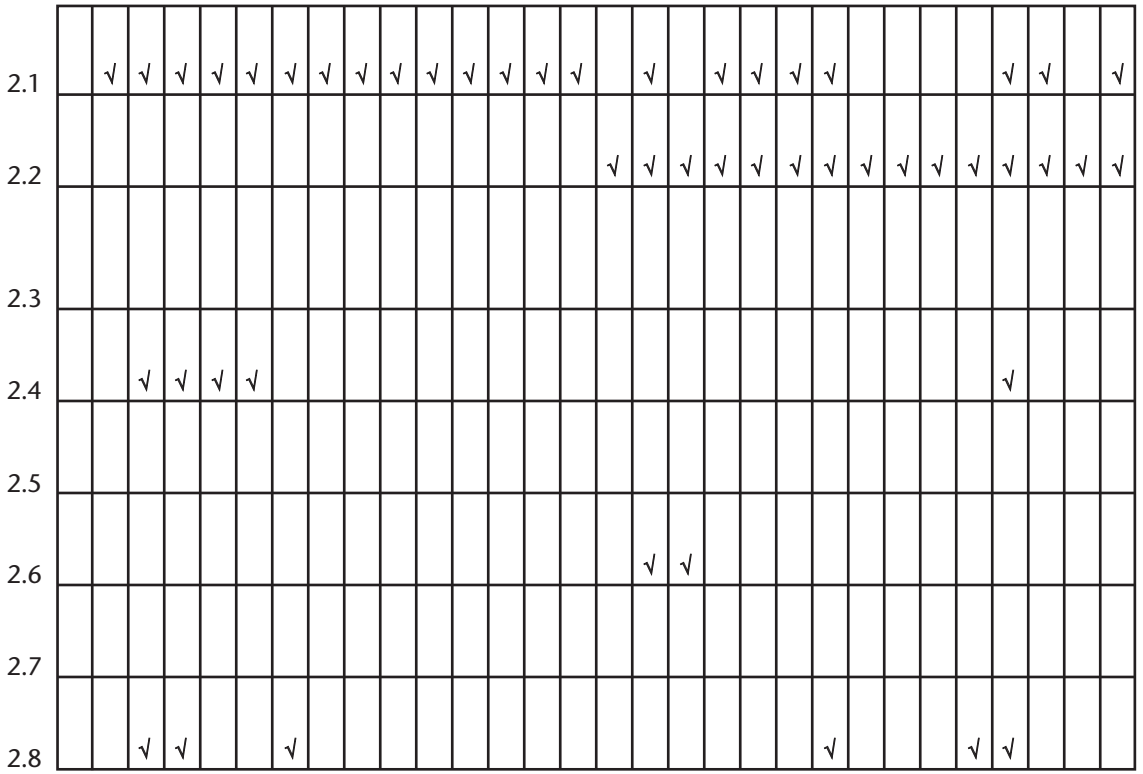
2.4 Solve simple problems involving multiplication of multidigit numbers by one-digit numbers (3,671 × 3 = __).

2.5 Solve division problems in which a multidigit number is evenly divided by a one-digit number (135 ÷ 5 = __).

2.6 Understand the special properties of 0 and 1 in multiplication and division.

2.7 Determine the unit cost when given the total cost and number of units.

2.8 Solve problems that require two or more of the skills mentioned above.



Correlations to California Mathematics Content Standards for Third Grade

Number Sense (continued)

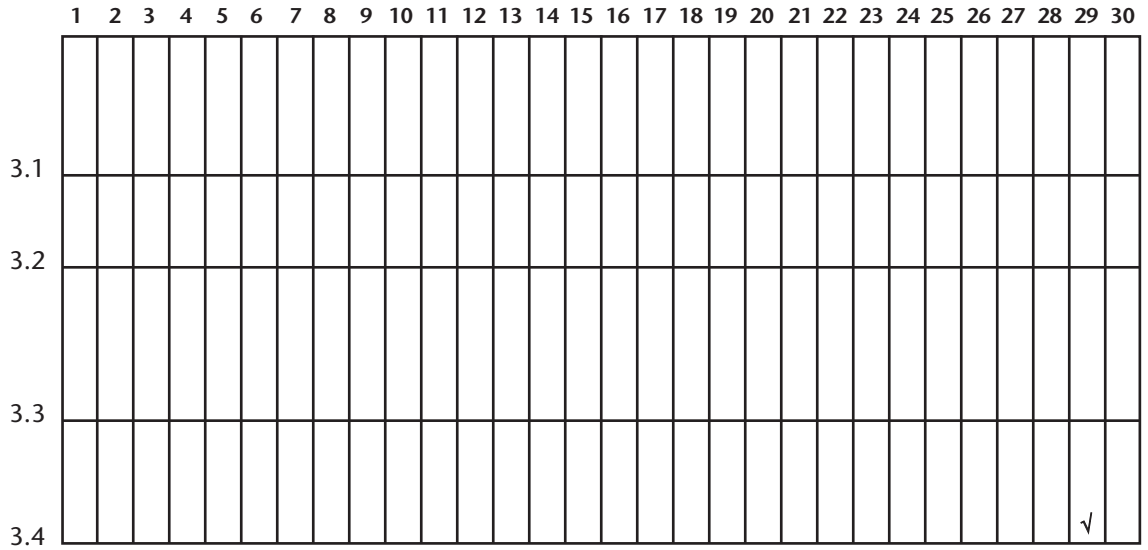
3.0 Students understand the relationship between whole numbers, simple fractions and decimals:

3.1 Compare fractions represented by drawings or concrete materials to show equivalency and to add and subtract simple fractions in context (e.g., $^1/_2$ of a pizza is the same amount as $^2/_4$ of another pizza that is the same size; show that $^3/_8$ is larger than $^1/_4$).

3.2 Add and subtract simple fractions (e.g., determine that $^1/_8 + {}^3/_8$ is the same as $^1/_2$).

3.3 Solve problems involving addition, subtraction, multiplication, and division of money amounts in decimal notation and multiply and divide money amounts in decimal notation by using whole-number multipliers and divisors.

3.4 Know and understand that fractions and decimals are two different representations of the same concept (e.g., 50 cents is $^1/_2$ of a dollar, 75 cents is $^3/_4$ of a dollar).



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Correlations to California Mathematics Content Standards for Third Grade

Measurement and Geometry

1.0 Students choose and use appropriate units and measurement tools to quantify the properties of objects:

1.1 Choose the appropriate tools and units (metric and U.S.) and estimate and measure the length, liquid volume, and weight/mass of given objects.

1.2 Estimate or determine the area and volume of solid figures by covering them with squares or by counting the number of cubes that would fill them.

1.3 Find the perimeter of a polygon with integer sides.

1.4 Carry out simple unit conversions within a system of measurement (e.g., centimeters and meters, hours and minutes).

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2.0 Students describe and compare the attributes of plane and solid geometric figures and use their understanding to show relationships and solve problems:

2.1 Identify, describe, and classify polygons (including pentagons, hexagons, and octagons).

2.2 Identify attributes of triangles (e.g., two equal sides for the isosceles triangle, three equal sides for the equilateral triangle, right angle for the right triangle).

2.3 Identify attributes of quadrilaterals (e.g., parallel sides for the parallelogram, right angles for the rectangle, equal sides and right angles for the square).

2.4 Identify right angles in geometric figures or in appropriate objects and determine whether other angles are greater or less than a right angle.

2.5 Identify, describe, and classify common three-dimensional geometric objects (e.g., cube, rectangular solid, sphere, prism, pyramid, cone, cylinder).

2.6 Identify common solid objects that are the components needed to make a more complex solid object.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
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Statistics, Data Analysis, and Probability

1.0 Students conduct simple probability experiments by determining the number of possible outcomes and make simple predictions:

1.1 Identify whether common events are certain, likely, unlikely, or improbable.

1.2 Record the possible outcomes for a simple event (e.g., tossing a coin) and systematically keep track of the outcomes when the event is repeated many times.

1.3 Summarize and display the results of probability experiments in a clear and organized way (e.g., use a bar graph or a line plot).

1.4 Use the results of probability experiments to predict future events (e.g., use line plot to predict the temperature forecast for the next day).

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
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