Introduction: Summary of Goals

GRADE THREE

By the end of grade three, students deepen their understanding of place value and their understanding of and skill with addition, subtraction, multiplication, and division of whole numbers. Students estimate, measure, and describe objects in space. They use patterns to help solve problems. They represent number relationships and conduct simple probability experiments.







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

NS 2.1: Students find the sum or difference of two whole numbers between 0 and 10,000.

Solve these problems:

a. 591	b. 1,283	c. 3,215	d. 300
+ 87	+ 6,074	- 2,806	- 27
678	7,357	409	273

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

NS 2.2: Students memorize to automaticity the multiplication tables for numbers between 1 and 10.

		Allow st	rudents	three m	inutes to	o do thes	se proble	ems	
8	2	1	5	2	1	3	2	7	1
<u>×1</u>	<u>× 7</u>	<u>× 6</u>	<u>× 1</u>	<u>x 4</u>	<u>× 4</u>	<u>x 2</u>	<u>x 2</u>	<u>× 1</u>	<u>× 3</u>
8	14	6	5	8	4	6	4	7	3
4	7	9	6	2	3	8	4	1	2
<u>× 1</u>	<u>× 3</u>	<u>× 1</u>	<u>x 2</u>	<u>x 2</u>	<u>x 3</u>	<u>× 1</u>	<u>x 2</u>	<u>× 5</u>	<u>× 1</u>
4	21	9	12	4	9	8	8	5	2
5	2	4	2	9	3	7	3	2	1
<u>x 2</u>	<u>× 8</u>	<u>× 4</u>	<u>x 6</u>	<u>x 2</u>	<u>x 3</u>	<u>x 2</u>	<u>× 5</u>	<u>× 5</u>	<u>× 7</u>
10	16	16	12	18	9	14	15	10	7
2	3	7	3	3	2	2	3	4	3
<u>× 9</u>	<u>× 7</u>	<u>× 5</u>	<u>× 9</u>	<u>× 6</u>	<u>× 7</u>	<u>x 4</u>	<u>x 4</u>	<u>× 5</u>	<u>× 7</u>
18	21	35	27	18	14	8	12	20	21
3	5	9	5	5	4	5	6	5	4
<u>× 8</u>	<u>× 4</u>	<u>× 9</u>	<u>× 5</u>	<u>× 7</u>	<u>× 3</u>	<u>× 6</u>	<u>x 3</u>	<u>x 3</u>	<u>× 8</u>
24	20	81	25	35	12	30	18	15	32
4	5	7	4	5	6	9	6	4	7
<u>× 7</u>	<u>x 9</u>	<u>× 3</u>	<u>x 6</u>	<u>× 7</u>	<u>x 5</u>	<u>x 8</u>	<u>x 4</u>	<u>x 9</u>	<u>× 4</u>
28	45	21	24	35	30	72	24	36	28
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Number Sense 2.0: Students calculate and solve problems involving addition, subtraction, multiplication, and division.

NS 2.2: Students memorize to automaticity the multiplication tables for numbers between 1 and 10.







Answer Key For The California Mathematics Standards Grade 3					
Num	ber Sense 2.0 : Students calculate and solve problems involving addition, subtraction, multiplication, and division.				
NS 2.7: cost and	Students determine the unit cost when given the total d number of units.				
Jill cost	bought 6 pounds of apples for \$1.38. How much did each pound ? 23 cents 23 6 \$1.38				
Num	Number Sense 2.0: Students calculate and solve problems involving addition, subtraction, multiplication, and division.				
NS 2.8: skills me	Students solve problems that require two or more of the entioned above.				
a.	You put 54 marbles into 6 bags, ending up with the same number of marbles in each bag. How many marbles would be in each bag if there were 6 bags? 9 marbles				
	54 marbles \div 6 bags \longrightarrow 6 54				
b.	A tree was planted 54 years <i>before</i> 1961. How old was that tree in 1997? 90 years				
	1997 - 1961 = 36 years 54 years + 36 years = 90 years				

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

NS 3.1: Students compare fractions represented by drawings or concrete materials to show equivalency and to add and subtract simple fractions in context (e.g. $\frac{1}{2}$ of a pizza is the same amount as $\frac{2}{4}$ of another pizza that is the same size; show that $\frac{3}{8}$ is larger than $\frac{1}{4}$).

Fill in parts to show each fraction. Then circle the fractions that are <u>equivalent</u>.



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

NS 3.2: Students add and subtract fractions (e.g., determine that $\frac{1}{1_8} + \frac{3}{8}$ is the same as $\frac{1}{2}$. $\frac{3}{8} + \frac{2}{8} = \frac{5}{8}$ $\frac{3}{8} + \frac{2}{8} = \frac{3+2}{8} = \frac{5}{8}$

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

NS 3.3: Students 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.

a. \$3.24 + \$.35 = <mark>\$3.5</mark>9

b. You have \$8.00. You buy 2 oranges and 3 juices. Each orange costs \$0.35 and each juice costs \$0.90. How much do you have left? \$4.60

2 x \$0.35 = \$0.70	\$0.70	\$8.00
3 x \$0.90 = \$2.70	<u>+ \$2.70</u>	<u>- \$3.40</u>
	\$3.40	\$4.60

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

NS 3.4: Students know and understand that fractions and decimals are two different representations of the same concept (e.g. 50 cents is $\frac{1}{2}$ of a dollar, 75 cents is $\frac{3}{4}$ of a dollar).

a.
$$\frac{1}{2}$$
 dollar = 50 cents. b. 75 cents

s is $\frac{3}{4}$ of a dollar

Algebra and Functions 1.0: Students select appropriate symbols, operations, and properties to represent, describe, simplify, and solve simple number relationship.

AF 1.1: Students represent relationships of quantities in the form of mathematical expressions, equations, or inequalities.

Write an equation to solve this problem, and then solve the equation. An oak tree is 42 feet high. The oak tree is 18 feet taller than the fir tree. How tall is the fir tree?

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t = height of oak tree = 42 ft
f = height of fir tree

The oak tree is 18 feet taller than the fir tree.

t = f + 18
42 = f + 18
f = 24

The fir tree is 24 feet high
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Answer Key For The California Mathematics Standards			
Grade 3			
Algebra and Functions 1.0: Students select appropriate symbols, operations, and properties to represent, describe, simplify, and solve simple number relationship.			
AF 1.4: Students express simple unit conversions in symbolic form (e.g., inches = feet x 12).			
c. Change 9 fact into inchest. Change work			
a. Change 8 feet into inches. Snow your work.			
$8 \times 12 = 96$ inches $8 \text{ ft} \cdot \frac{12 \text{ inches}}{1 \text{ ft}} = 96$ inches			
b Change Q fact into yanda Show your work			
D. Change 9 Teet into yaras. Show your work.			
$\frac{9}{3} = 3 \text{ yards} \qquad 9 \text{ft} \cdot \frac{1 \text{ yd}}{3 \text{ ft}} = 3 \text{ yards}$			



Algebra and Functions 1.0: Students select appropriate symbols, operations, and properties to represent, describe, simplify, and solve simple number relationship.

AF 1.5: Students 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 $7 \times 3 \times 5$?).

a. Make 2 multiplication and 2 division statements using the numbers 5, 4, and 20 :





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Algebra and Functions 2.0: Students represent simple functional relationships.

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

Mr. Brown's class was doing a science experiment. There were 7 groups in the class. Each group got 4 test tubes. How many test tubes did the class use? 28 test tubes



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

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



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

MG 1.2: Students 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.

Below is a picture of a rectangle. What is the area of the figure?





5 cm

4cm x 5cm = 20cm²







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

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



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

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



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

MG 2.6: Students identify common solid objects that are the components needed to make a more complex solid object.



Answer Key For The California Mathematics Standards Grade 3			
Statistics, Data Analysis, and Probability 1.0: Students conduct simple probability experiments by determining the number of possible outcomes and make simple predictions			
S 1 1. Students identify whether common events are certain			

S 1.1: Students identify whether common events are cert likely, unlikely, or improbable.

Circle the word that describes the likelihood of something happening:

a. The sun will rise tomorrow.

likely

(certair

unlikely

impossible

b. You could have an elephant for a house pet.

likely

certain



impossible

Statistics, Data Analysis, and Probability 1.0: Students conduct simple probability experiments by determining the number of possible outcomes and make simple predictions.

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

I dropped a penny on the floor. Here is what happened:

1st time: 2nd time: 3rd time: 4th time: 5th time: 6th time: 7th time: 8th time:

tails tails heads tails heads tails tails heads

5 tails

3 heads

5

-3

2

2

How many more times did tails occur than heads?

Statistics, Data Analysis, and Probability 1.0: Students conduct simple probability experiments by determining the number of possible outcomes and make simple predictions.

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

[SEE NEXT PAGE FOR SOLUTION]

Here are the results of an experiment in which a student flipped a coin:

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First flip	Heads
Next flip	Tails
Next flip	Heads
Next flip	Tails
Next flip	Heads
Next flip	Tails

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