

Answer Key For The California Mathematics Standards Grade 2

Introduction: Summary of Goals

GRADE TWO

By the end of grade two, students understand place value and number relationships in addition and subtraction and they use simple concepts of multiplication. They measure quantities with appropriate units. They classify shapes and see relationships among them by paying attention to their geometric attributes. They collect and analyze data and verify the answers.

Answer Key For The California Mathematics Standards Grade 2

Number Sense 1.0: Students understand the relationship between numbers, quantities, and place value in whole numbers up to 1,000.

NS 1.1: Students count, read, and write whole numbers to 1,000 and identify the place value for each digit.

a. Circle the number: three hundred four

340

34

3004

304

b. Circle the number: two hundred eleven

121

221

211

212

c. Circle the number: five hundred fourteen

540

514

541

515

d. Write these numbers:

1. **nine hundred two**

902

2. **six hundred twelve**

612

3. **three hundred thirty**

330

4. **seven hundred eighty-four**

784

Answer Key For The California Mathematics Standards

Grade 2

Number Sense 1.0: Students understand the relationship between numbers, quantities, and place value in whole numbers up to 1,000.

NS 1.2: Students use words, models, and expanded forms (e.g., $45 = 4 \text{ tens} + 5$) to represent numbers (to 1,000).

Write the expanded notation for these numbers:

a. $564 = 500 + 60 + 4$

b. $720 = 700 + 20 + 0$

c. $902 = 900 + 0 + 2$

Number Sense 1.0: Students understand the relationship between numbers, quantities, and place value in whole numbers up to 1,000.

NS 1.3: Students order and compare whole numbers to 1,000 by using the symbols $<$, $=$, $>$.

Fill in the missing symbol $>$ or $<$ or $=$

a. $207 > 92$ d. $265 < 843$

b. $139 < 257$ e. $412 > 261$

c. $347 = 300 + 40 + 7$

Answer Key For The California Mathematics Standards Grade 2

Number Sense 2.0: Students estimate, calculate, and solve problems involving addition and subtraction of two- and three-digit numbers.

NS 2.1: Students understand and use the inverse relationship between addition and subtraction (e.g., an opposite number sentence for $8 + 6 = 14$ is $14 - 6 = 8$) to solve problems and check solutions.

- a. Make two addition and two subtraction number sentences with these numbers:

$$4 \quad 6 \quad 10 \quad \boxed{4} + \boxed{6} = \boxed{10}$$

$$\boxed{6} + \boxed{4} = \boxed{10}$$

$$\boxed{10} - \boxed{4} = \boxed{6}$$

$$\boxed{10} - \boxed{6} = \boxed{4}$$

- b. Here is how James worked a subtraction problem. Use addition to check to see if he worked the problem correctly. You will need to write the addition problem.

$$\begin{array}{r} 26 \\ - 12 \\ \hline 15 \end{array} \neq \begin{array}{r} \boxed{15} \\ + \boxed{12} \\ \hline \boxed{27} \end{array}$$

Since 27 is not equal to 26, James did not work the problem correctly.

Answer Key For The California Mathematics Standards

Grade 2

Number Sense 2.0: Students understand the relationship between numbers, quantities, and place value in whole numbers up to 1,000.

NS 2.2: Students find the sum or difference of two whole numbers up to three digits long.

$$\begin{array}{r} \text{a. } 34 \\ + 23 \\ \hline 57 \end{array}$$

$$\begin{array}{r} \text{b. } 343 \\ + 265 \\ \hline 608 \end{array}$$

$$\begin{array}{r} \text{c. } 457 \\ + 324 \\ \hline 781 \end{array}$$

$$\begin{array}{r} \text{d. } 607 \\ + 299 \\ \hline 906 \end{array}$$

$$\begin{array}{r} \text{e. } 34 \\ - 23 \\ \hline 11 \end{array}$$

$$\begin{array}{r} \text{f. } 748 \\ - 426 \\ \hline 322 \end{array}$$

$$\begin{array}{r} \text{g. } 543 \\ - 178 \\ \hline 365 \end{array}$$

$$\begin{array}{r} \text{h. } 807 \\ - 695 \\ \hline 112 \end{array}$$

Number Sense 2.0: Students understand the relationship between numbers, quantities, and place value in whole numbers up to 1,000.

NS 2.3: Students use mental arithmetic to find the sum or difference of two-digit numbers.

Solve these problems in your head and write the answers.

$$\text{a. } 50 + 30 = 80$$

$$\text{d. } 50 + 40 = 90$$

$$\text{b. } 80 - 20 = 60$$

$$\text{e. } 60 + 5 = 65$$

$$\text{c. } 32 + 4 = 36$$

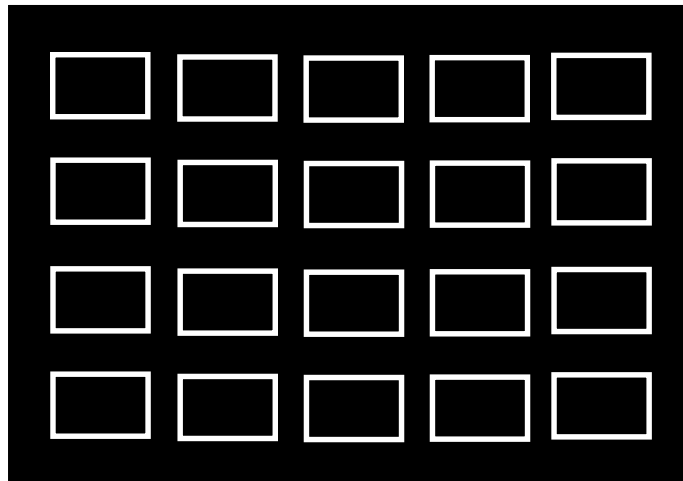
$$\text{f. } 70 - 1 = 69$$

Answer Key For The California Mathematics Standards Grade 2

Number Sense 3.0: Students model and solve simple problems involving multiplication and division.

NS 3.1: Students use repeated addition, arrays, and counting by multiples to do multiplication.

- a. 1. Draw a picture of a classroom that has 5 desks across the front of the room and 4 desks in each row.



front

2. How many chairs are in the classroom?

20

- b. Figure out and write the numbers you say when you count by 4s.

4 8 **12 16 20 24 28 32 36 40 44**

Answer Key For The California Mathematics Standards

Grade 2

Number Sense 3.0: Students model and solve simple problems involving multiplication and division.

NS 3.2: Students use repeated subtraction, equal sharing, and forming equal groups with remainders to do division.

Molly had 20 pieces of candy. She gave two pieces to her sister.

a. How many did she have left? **18**

b. If she gave away 2 pieces each to 4 more people, how many pieces would she have left? **10**

Number Sense 3.0: Students model and solve simple problems involving multiplication and division.

NS 3.3: Students know the multiplication tables of 2s, 5s and 10s (to "times 10") and commit them to memory.

Write the answers:

a. $5 \times 3 = 15$

b. $2 \times 7 = 14$

c. $5 \times 8 = 40$

d. $10 \times 6 = 60$

e. $2 \times 8 = 16$



f. $10 \times 4 = 40$

Answer Key For The California Mathematics Standards Grade 2

Number Sense 4.0: Students understand that fractions and decimals may refer to parts of a set and parts of a whole.

NS 4.1: Students recognize, name, and compare unit fractions from $\frac{1}{12}$ to $\frac{1}{2}$.

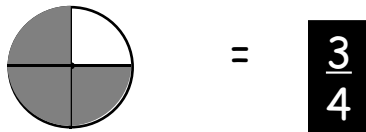
Fill in the sign $>$ or $<$

a. $\frac{1}{4}$  $\frac{1}{8}$ b. $\frac{1}{9}$  $\frac{1}{7}$

Number Sense 4.0: Students understand that fractions and decimals may refer to parts of a set and parts of a whole.

NS 4.2: Students recognize fractions of a whole and parts of a group (e.g., one-fourth of a pie, two-thirds of 15 balls).

a. Write the fraction for the shaded area of this picture:



b. How many faces out of the group are smiling? Write a fraction to show this.



Answer Key For The California Mathematics Standards

Grade 2

Number Sense 4.0: Students understand that fractions and decimals may refer to parts of a set and parts of a whole.

NS 4.3: Students know that when all fraction parts are included, such as four-fourths, the result is equal to the whole and to one.

- a. Fill in the missing numeral

$$1 = \frac{\boxed{4}}{4}$$

$$\frac{5}{\boxed{5}} = 1$$

- b. If a pizza is divided into thirds, how many pieces make one whole pizza? **3**

Number Sense 5.0: Students model and solve problems by representing, adding, and subtracting amounts of money.

NS 5.1: Students solve problems using combinations of coins and bills.

Lee has a bag of nickels and dimes.

What is a way that Lee could pay the exact amount for a box of pencils that costs 35 cents?

7 nickels
3 dimes and 1 nickel
2 dimes and 3 nickels
1 dime and 5 nickels

Answer Key For The California Mathematics Standards Grade 2

Number Sense 5.0: Students model and solve problems by representing, adding, and subtracting amounts of money.

NS 5.2: Students know and use the decimal notation and the dollar and cent symbols for money.

a. Using a dollar sign (\$) and a decimal point:

1. Write 2 dollars and 57 cents: **\$2.57**

2. Write 9 dollars and 9 cents: **\$9.09**

3. Write 32 cents: **\$0.32 (or \$.32)**

b. Write \$.32 a different way: **$\$ \frac{32}{100}$ or 32¢**

Answer Key For The California Mathematics Standards

Grade 2

Number Sense 6.0: Students use estimation strategies in computation and problem solving that involve numbers that use the ones, tens, hundreds, and thousands places.

NS 6.1: Students recognize when an estimate is reasonable in measurement (e.g., closest inch).

About how long is a pencil? Circle the best answer.

5 feet

5 inches

5 yards

Algebra and Functions 1.0: Students model, represent, and interpret number relationships to create and solve problems involving addition and subtraction.

AF 1.1: Students use the commutative and associative rules to simplify mental calculations and to check results.

What is the easiest way to find $27 + 69 + 1$? **B**

- A) Add 27 and 1 first, then add 69 to the sum.
- B) Add 69 and 1 first, then add 27 to the sum.
- C) Add 69 and 27 first, then add 1 to the sum.
- D) I don't know

Answer Key For The California Mathematics Standards

Grade 2

Algebra and Functions 1.0: Students model, represent, and interpret number relationships to create and solve problems involving addition and subtraction.

AF 1.2: Students relate problem situations to number sentences involving addition and subtraction.

- a. Three classes at your school will see a play together.

Room A has **18** students.

Room B has **34** students.

Room C has **19** students.

Room D has **29** students.

Write the number sentence you would use to find the total number of chairs needed if rooms A, B, and C go to the play.

$$18 + 34 + 19 = 71$$

- b. Jan is 12 years old. Her sister is 5 years younger than Jan. How old is Jan's sister? Write a number sentence that will give the answer to the problem.

$$12 - 5 = 7$$

Answer Key For The California Mathematics Standards

Grade 2

Algebra and Functions 1.0: Students model, represent, and interpret number relationships to create and solve problems involving addition and subtraction.

AF 1.3: Students solve addition and subtraction problems by using data from simple charts, picture graphs, and number sentences.

This table shows how some children get to school.

	Take Bus	Walk to School
Boys	35	22
Girls	14	17

a. How many children walk to school?

39

$$22 + 17 = 39$$

b. How many more boys walk to school than girls?

5

$$22 - 17 = 5$$

c. Are there more boys or girls on the bus?

boys

Answer Key For The California Mathematics Standards Grade 2

Measurement and Geometry 1.0: Students understand that measurement is accomplished by identifying a unit of measure, iterating (repeating) that unit, and comparing it to the item to be measured.

MG 1.1: Students measure the length of objects by iterating (repeating) a nonstandard or standard unit.

Below is a picture of a house and a stick. About how many sticks wide is the picture? **A**

- A. **3 sticks** B. **4 sticks** C. **6 sticks** D. **9 sticks**



Answer Key For The California Mathematics Standards

Grade 2

Measurement and Geometry 1.0: Students understand that measurement is accomplished by identifying a unit of measure, iterating (repeating) that unit, and comparing it to the item to be measured.

MG 1.2: Students use different units to measure the same object and predict whether the measure will be greater or smaller when a different unit is used.

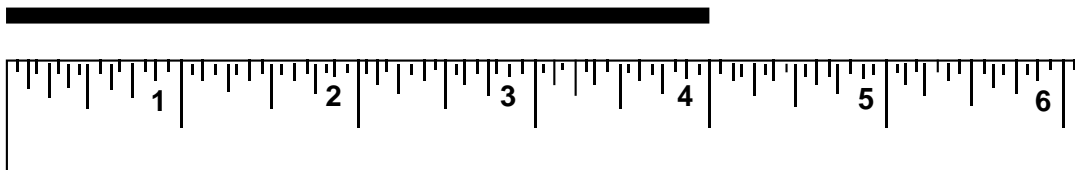
Measure the length of your desk with a new crayon and with a new pencil. Which is greater, the number of crayon units or the number of pencil units?

The number of crayon units

Measurement and Geometry 1.0: Students understand that measurement is accomplished by identifying a unit of measure, iterating (repeating) that unit, and comparing it to the item to be measured.

MG 1.3: Students measure the length of an object to the nearest inch and/or centimeter.

About how many inches long is the line?



Four inches

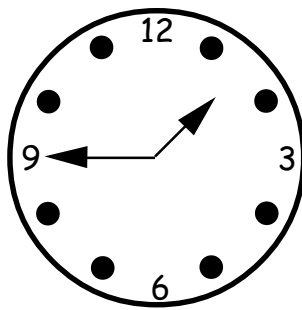
Answer Key For The California Mathematics Standards Grade 2

Measurement and Geometry 1.0: Students understand that measurement is accomplished by identifying a unit of measure, iterating (repeating) that unit, and comparing it to the item to be measured.

MG 1.4: Students tell time to the nearest quarter hour and know relationships of time (e.g., minutes in an hour, days in a month, weeks in a year).

a. What time is it on this clock?

1:45



b. 1. How many minutes in one hour?

60

2. How many days in one week?

7

c. Circle the greater amount of time

a. **3 weeks** or 19 days

b. 27 days or **4 weeks**

c. **85 seconds** or 1 minute

d. **1 day** or 20 hours

Answer Key For The California Mathematics Standards

Grade 2

Measurement and Geometry 1.0: Students understand that measurement is accomplished by identifying a unit of measure, iterating (repeating) that unit, and comparing it to the item to be measured.

MG 1.5: Students determine the duration of intervals of time in hours (e.g., 11:00 a.m. to 4:00 p.m.).

Anna started work at 10:00 a.m. It took her 3 hours to do her work. What time did Anna finish her work?

1:00 p.m.

Measurement and Geometry 2.0: Students identify and describe the attributes of common figures in the plane and of common objects in space.

MG 2.1: Students describe and classify plane and solid geometric shapes (e.g., circle, triangle, square, rectangle, sphere, pyramid, cube, rectangular prism) according to the number and shape of faces, edges, and vertices.

a. How many sides does a triangle have?

3

b. How many vertices does a rectangle have?

4

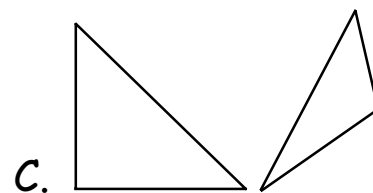
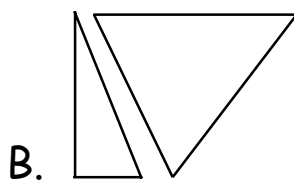
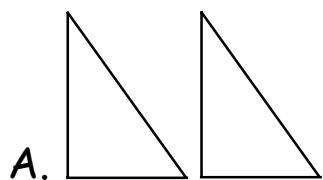
c. How many faces on a cube?

6

Answer Key For The California Mathematics Standards Grade 2

Measurement and Geometry 2.0: Students identify and describe the attributes of common figures in the plane and of common objects in space.

MG 2.2: Students put shapes together and take them apart to form other shapes (e.g., two congruent right triangles can be arranged to form a rectangle).



Which two triangles can be put together to form a rectangle? **A**

Answer Key For The California Mathematics Standards

Grade 2

Statistics, Data Analysis, and Probability 1.0: Students collect numerical data and record, organize, display, and interpret the data on bar graphs and other representations.

S 1.1: Students record numerical data in systematic ways, keeping track of what has been counted.

Here is a table to record the number of students whose favorite sport is one of the five below:

Favorite Sport	Running	Basketball	Swimming	Soccer	Baseball
Number of Students					

Ten students gave answers. Juan, Bob, and Judy like running the most. Mu-lan and Carlos like swimming the most. Angel and Tom like soccer the most. Julia likes baseball the most. Bobby and Jack like basketball the most. What number should be written below "Swimming"?

- A. 0
- B. 1
- C. 2
- D. 3
- E. I don't know

Answer Key For The California Mathematics Standards Grade 2

Statistics, Data Analysis, and Probability 1.0: Students collect numerical data and record, organize, display, and interpret the data on bar graphs and other representations.

S 1.2: Students represent the same data set in more than one way (e.g., bar graphs and charts with tallies).

QUESTION CONTINUES OVER PAGE

This tally shows how many students were absent this week.

Students Absent this Week

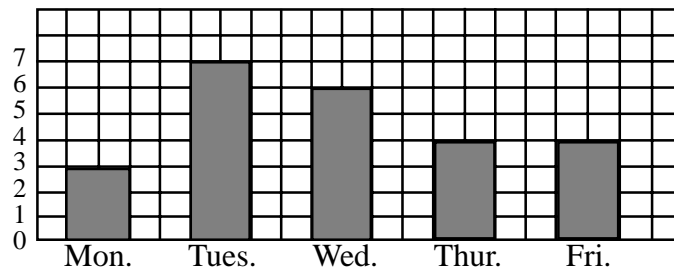
Monday	
Tuesday	
Wednesday	
Thursday	
Friday	

Which bar graph shows the same data?

D

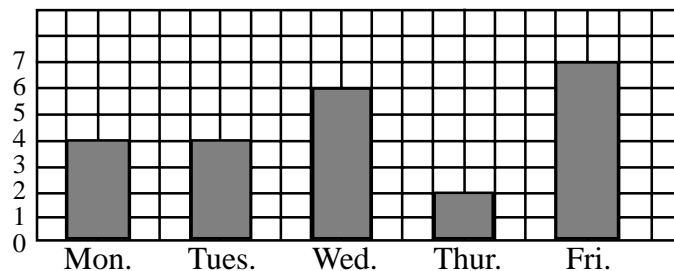
A.

Number of
students absent



B.

Number of
students absent



SEE GRAPHS ON NEXT PAGE

Answer Key For The California Mathematics Standards Grade 2

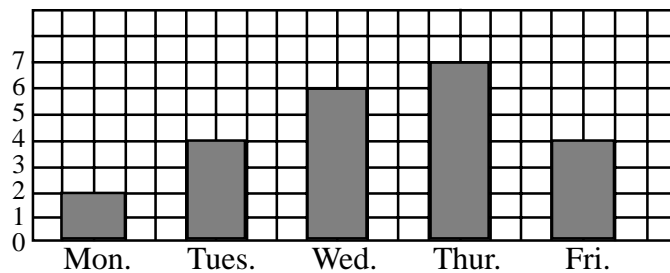
Statistics, Data Analysis, and Probability 1.0: Students collect numerical data and record, organize, display, and interpret the data on bar graphs and other representations.

S 1.2: Students represent the same data set in more than one way (e.g., bar graphs and charts with tallies).

[CONTINUED]

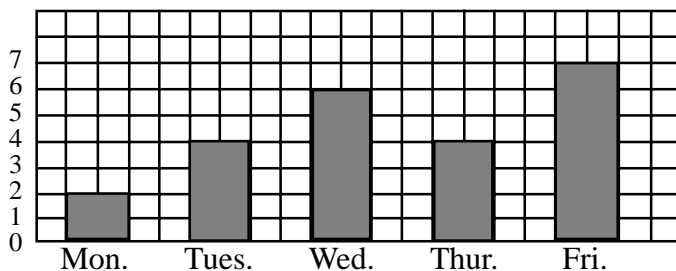
C.

Number of
students absent



D.

Number of
students absent



Answer Key For The California Mathematics Standards Grade 2

Statistics, Data Analysis, and Probability 1.0: Students collect numerical data and record, organize, display, and interpret the data on bar graphs and other representations.

S 1.3 : Students identify features of data sets (range and mode).

- a. Miguel had a party. Eight children were at the party. If each one got two balloons, how many balloons did the children have altogether?

16

- b. What will the missing numbers be if the numbers increase by the same amount?

1, 4, **7**, 10, **13**, 16

- c. Here are the scores that children received on a test.

90 - Jerry, Sam, Alicia, Ramon, Teresa

80 - Alexander, Charlene, Susan, Thomas, Sandra, Teresa

65 - Arthur, Betsy

50 - David

1. What score did the most children earn?
2. What was the highest score?
3. What was the lowest score?

80

90

50