

4 Grade 4 Math for STAAR™

DynaNotes™ Review Guide



Category 1 – Numbers, Operations, and Reasoning

PLACE VALUE

hundred millions	ten millions	millions	hundred thousands	ten thousands	thousands	hundreds	tens	ones
2	4	6	4	3	2	1	5	6

larger place value ← → smaller place value

Commas separate the millions from the hundred thousands and the thousands from the hundreds. When reading numbers aloud, say *million* or *thousand* when you reach the comma.

Example: 246,432,156 = 200,000,000 + 40,000,000 + 6,000,000 + 400,000 + 30,000 + 2,000 + 100 + 50 + 6

Read as *two hundred forty-six million, four hundred thirty-two thousand, one hundred fifty-six*.

COMPARING AND ORDERING NUMBERS

Symbol	Meaning	Example
=	is equal to	715 = 715
>	is greater than	751 > 715
<	is less than	715 < 751



To compare numbers by place value:

- Write each number you want to compare on its own line.
- Line up the same place values in the same columns.
- Starting from the left, compare the value of each number.
- If the numbers in a certain column are the same, move to the next column (to the right) and compare the numbers. Do this until the numbers are different.
- Compare the different numbers.

Example: Compare 534,786 to 536,763.

534,786 From left to right, the first column that is different is the thousands. Since 4 is less than 6, 534,786 is less than 536,763.

Order numbers from least to greatest or from greatest to least (like 88, 63, 100).

ROUNDING AND ESTIMATING

- Find the place to which you are rounding (thousands).
- Look at the number to the right of it.
- If that number is 5 or greater, round up the number to the left and change the number to the right to zero. If the number is less than 5, round down the number to the left and change the number to the right to zero.

Examples: Round 3,786 to the nearest hundred.

3,786 rounds to 3,800 because 8 is greater than 5.

3,786 rounds to 3,400 because 7 is less than 5.

When you do not need an exact amount, you can *estimate*.

Example: Estimate the number of grapes if she eats 8 grapes.

Example: Estimate the number of grapes if she eats 8 grapes.

ADDITION AND SUBTRACTION

sum: result of adding numbers (total)

To add numbers, line up the numbers according to their place value. Add each column starting from the right, regroup (carry), and then do the next column.

difference: result of subtracting numbers

To subtract numbers, line up the numbers by their place value. Subtract each column starting from the right, regroup (borrow), and then do the next column.

Example: Ann has 229 coins and Max has 1,427 coins. How many more coins does Ann have than Max?

229 - 1,427

REPRESENTING MULTIPLICATION AND DIVISION

multiplication: method to combine numbers or objects

product: result of multiplying numbers; any number $\times 0 = 0$

factor	multiplied by	factor	product
11	\times	7	77

Example: Find the product. The grid shows 11 rows and 7 columns. The number of squares is 77. $11 \times 7 = 77$

division: method to split a number into equal parts

quotient: result of dividing a number

dividend	divided by	divisor	quotient
56	\div	7	8

arrays: to help with multiplication and division problems

Example: Use array models to represent the following number sentences.

$5 \times 3 = 15$ (rows \times columns = total) $5 \times 3 = 15$

$3 \times 5 = 15$ (rows \times columns = total) $3 \times 5 = 15$

$15 \div 3 = 5$ (total \div rows = columns) $15 \div 3 = 5$

$15 \div 5 = 3$ (total \div columns = rows) $15 \div 5 = 3$

MULTIPLICATION AND DIVISION PROBLEMS

Multiplication: Multiply columns starting at the ones and then move to the next column (carry). Use 0 as a placeholder.

Example: A room has 14 rows of chairs. Each row contains 13 chairs. How many total chairs are there? **Answer:** 182

$14 \times 13 = 182$

Division: Decide where to place the first digit of quotient. Multiply by the divisor. Subtract and bring down the next digit of the dividend.

Example: Demi evenly splits 76 cookies onto 4 plates. How many cookies are on each plate? **Answer:** 19

$76 \div 4 = 19$

FRACTIONS

fraction: describes part of a whole = $\frac{\text{numerator}}{\text{denominator}}$

Example: $\frac{1}{10} = 1$ out of 10 = one-tenth of whole

mixed number: number that includes a whole number and a fraction

Example: model of $2\frac{3}{4}$

Use models (pictures) to add, subtract, and order fractions and mixed numbers.

equivalent fractions: fractions that have the same amount; compare fractions using models

Example: These models show equivalent fractions, so $\frac{1}{4} = \frac{2}{8} = \frac{4}{16}$.

$\frac{1}{4} = \frac{2}{8} = \frac{4}{16}$

ordering fractions: use models to compare sizes of the shaded areas; can arrange from greatest to least or from least to greatest

Example: $\frac{1}{3} < \frac{1}{2} < 1 < 1\frac{1}{2}$

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