Grade 3 Advanced Math

Unit 1: Place Value, Addition and Subtraction up to 10,000

Dear Families,

We want to make sure that you understand the mathematics your child will be learning this year. Below you will find the standards we will be learning in Unit 1.

Each standard is in bold print, and below each one is an explanation with examples. Please let your teacher know if you have any questions. We appreciate your partnership and support.

3.NR.1.1: Read and write multi-digit whole numbers up to 10,000 to the thousands using base-ten numerals and expanded form.

Students should be able to…

- compose (combine) and decompose (break apart) numbers in various ways.

Examples:

1. 15 tens + 13 ones =
2. 568 =

Answers:

1. 163 OR 16 tens + 3 ones
2. 500 + 50 + 18 OR 500 + 60 + 8

3.NR.1.2: Use place value reasoning to compare multi-digit numbers up to 10,000, using >, =, and < symbols to record the results of comparison.

Students should be able to…

- compare whole numbers up to 10,000.
- create bar graphs and dot plots to represent numerical data when answering a statistical investigative question.
- analyze the data presented in dot plots and bar graphs to compare multi-digit numbers using the symbols to record comparison in context.

Examples:

1. Which comparison is true?
    a. 9,457 > 9,457
    b. 9,475 > 9,547
    c. 9,547 > 9,574

d. 9,547 > 9,457

2. Which number would make the following problem correct?
   9,857 < ____

   a. 9,857
   b. 9,875
   c. 9,785
   d. 9,578

Answers:

1. D.
2. B.

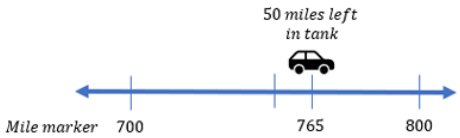
3.NR.1.3: Use place value understanding to round whole numbers up to 1,000 to the nearest 10 or 100.

Students should be able to…

- use place value understanding to round whole numbers for an authentic purpose within authentic situations.
- locate numbers on a number line to determine the nearest multiple of 10 or 100.

Examples:

1. On a road trip, there is a gas station at the 700-mile mark and the 800-mile mark. You have about 50 miles left in the tank when you hit the 765-mile mark. Which gas station is the closest for you to go to?



2. Which numbers round to 500 when they are rounded to the nearest hundred?
   a. 445
   b. 555
   c. 463
   d. 455
   e. 563
   f. 536

Answers:

1. 800-mile mark
2. C, D, & F

3.PAR.2.1: Fluently add and subtract within 1,000 to solve problems.

Students should be able to…

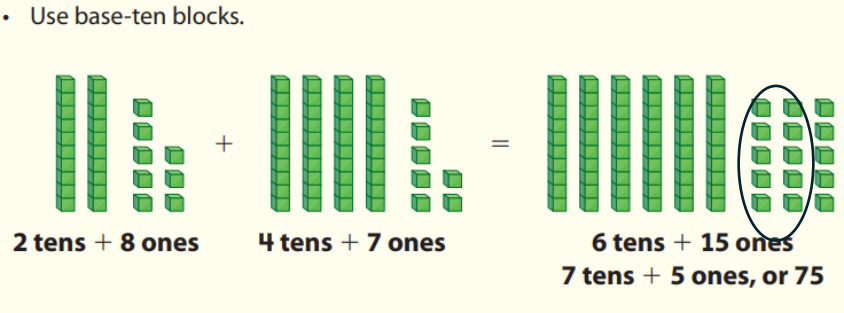
- compose (combine) and decompose (break apart) numbers in various ways.

Examples:

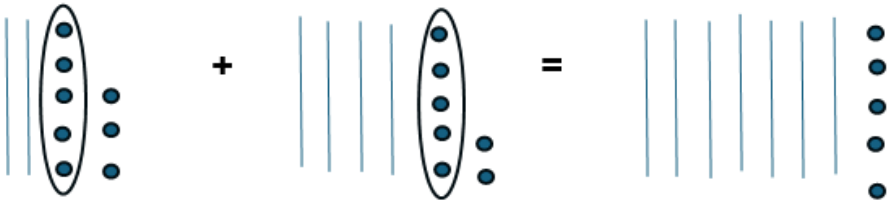
1. 28 + 47 = _____
2. 5,436 – 3,155 = _____

Answers:

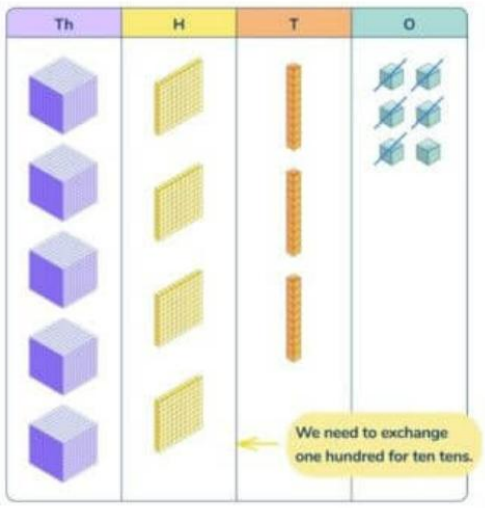
1. One strategy is using a visual with base-ten blocks to represent the numbers.



When a student draws base ten blocks, it may look like this:



2. The visual below is showing how base ten blocks relate to subtraction using the standard algorithm. In this problem, the student would need to break down a hundred to provide more tens. This is what we call regrouping.



	Th	H	T	O
	5	4	3	6
–	3	1	5	5

3.PAR.2.2: Apply part-whole strategies, properties of operations and place value understanding, to solve problems involving addition and subtraction within 10,000.

Students should be able to…

- add and subtract multi-digit whole numbers within 10,000 to solve authentic, mathematical problems using efficient and generalizable procedures, based on knowledge of place value and properties of operations.

Examples:

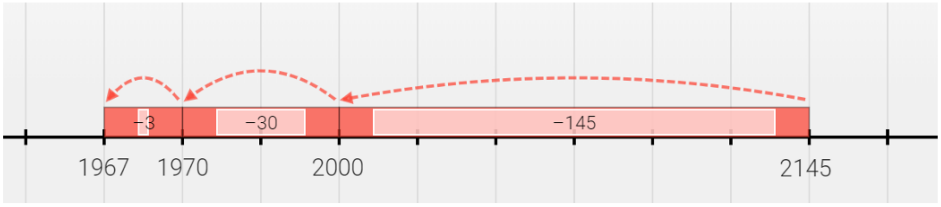
1. What is the unknown number that makes this equation true?
   323 + 18 = 300 + ____

2. 2,145 – 178 = _____

Answers:

1. 41
2. 1,967

Number Line Representation:



Advanced Math Standards

4.NR.1.1: Read and write multi-digit whole numbers to the hundred-thousands place using base-ten numerals and expanded form.

Students should be able to…

- understand what the expanded form of a number is.

Note: Students are *not* expected to write numbers in word form.

Helpful Vocabulary:

- expanded form- a way to express a number as the sum of the place values of its digits.

Examples:

1. What is the standard form of this number: fifty thousand, one hundred two
2. Write 12,678 in expanded form.

Answers:

1. 50,102
2. 12,000 + 600 + 70 + 8

4.NR.1.3: Use place value reasoning to represent, compare, and order multi-digit numbers, using >, =, and < symbols to record the results of comparisons.

Students should be able to…

- order up to 5 whole numbers less than 1,000,000 through the hundred-thousands place.

Note: Students are *not* expected to use more than two inequality symbols when recording comparisons (< or >).

Examples:

1. Use <,>, or = to fill in the blank: 6,245 _____ six thousand two hundred one
2. Which list of numbers is ordered from least to greatest?
    a. 9,345; 9,354; 9,534; 9,543
    b. 9,543; 9,534; 9,354; 9,345
    c. 9,543; 9,534; 9,543; 9,345
    d. 9,354; 9,345; 9,534; 9,543

Answers:

1. >
2. A.

4.NR.1.4: Use place value understanding to round multi-digit whole numbers.

Students should be able to…

- round whole numbers to the 1,000s, 10,000s and 100,000s.
- locate numbers on a number line to determine the nearest multiple of 1,000s, 10,000s or 100,000s.

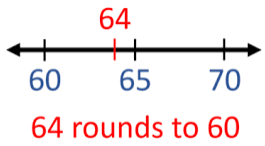
Examples:

1. Mrs. Pierce went to Disney World and walked 13,875 steps in one day! How many steps did she walk when rounded to the nearest thousand?

2. Round 64 to the nearest 10.

Answers:

1. 14,000 steps
2. Students can use number lines to help them round. Number lines help students visualize which benchmark number their given number is closer to. The midpoint on this number line is 65. 64 is less than the midpoint and closer to 60.



4.NR.2.1: Fluently add and subtract multi-digit numbers to solve practical, mathematical problems using place value understanding, properties of operations, and relationships between operations.

Students should be able to…

- Fluently (flexibility, efficiency, and accuracy) add and subtract multi-digit whole numbers, to solve relevant, mathematical problems using efficient and flexible procedures, based on knowledge of place value and properties of operations.

Helpful Vocabulary:

- flexibility - the ability to think about a problem in more than one way and to adapt or adjust thinking, if necessary
- efficiency - the ability to produce answers relatively easily with a minimal number of steps
- accuracy - the ability to produce mathematically precise answers.

Example:

The Atlanta Zoo had 95,548 students visit on field trips last year. The Georgia Aquarium had 107,885 student visitors last year. How many more students visited the Georgia Aquarium than the Atlanta Zoo?

Answer:

12,337 visitors