Grade 4 Math

Unit 1: Making Connections with Place Value Understanding, Addition and Subtraction of Whole Numbers

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.

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…

- read multi-digit whole numbers to the hundred-thousands place.
- write multi-digit whole numbers to the hundred-thousands place.
- use base-ten numerals.
- use expanded form.

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

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.1.2: Recognize and show that a digit in one place has a value ten times greater than what it represents in the place to its right and extend this understanding to determine the value of a digit when it is shifted to the left or right, based on the relationship between multiplication and division.

Students should be able to…

- use numerical reasoning to represent and explain using concrete materials, the relationship among the numbers 1, 10, 100, and 1,000.
- extend the pattern to the hundred-thousands place.
- recognize the relationship of same digits located in different places in a whole number.

Example:

The population of Atlanta is about 500,000 people and the population of Valdosta is about 50,000 people. How many times greater is the population of Atlanta than Valdosta?

Answer:

10 times greater

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.

Examples:

1. Use <,>, or = to fill in the blank: 6,245 _____ six thousand two hundred one
2. Use <,>, or = to fill in the blank: 10,980 _____ 10,984

Answers:

1. >
2. <

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.

Example:

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

Answer:

14,000 steps

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

Students should be able to…

- fluently (flexibly, accurately, and efficiently) add and subtract multi-digit whole numbers.
- solve relevant mathematical problems using efficient and flexible procedures, based on knowledge of place value and properties of operations.
    - Efficiency in mathematics is the ability to produce answers relatively easily with a minimal number of steps. Efficiency does *not* mean students should be timed.
    - Flexibility is the ability to think about a problem in more than one way and to adapt or adjust thinking, if necessary.
    - Accuracy is 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

4.NR.2.5: Solve multi-step problems using addition, subtraction, multiplication, and division involving whole numbers. Use mental computation and estimation strategies to justify the reasonableness of solutions.

Students should be able to…

- use the four operations with whole numbers to solve authentic, mathematical problems.

Example:

Maddie bought 72 water bottle stickers from Amazon. Her teacher gave her 12 more stickers. Then, she decided to share 27 stickers with her class. How many stickers did she have left?

Answer:

57 stickers

4.MDR.6.1*: Use the four operations to solve problems involving elapsed time to the nearest minute, intervals of time, metric measurements of liquid volumes, lengths, distances, and masses of objects, including problems involving fractions with like denominators, and also problems that require expressing measurements given in a larger unit in terms of a smaller unit in terms of a larger unit (*Only mass of objects).

Students should be able to…

- express larger units in terms of smaller units within the same measurement system.
- express smaller units in terms of larger units within the same measurement system.
- explain this conceptually without being expected to use decimal notation.

Note: Students are *not* expected to memorize conversions. The focus here is on seeing the equivalence between quantities represented in different measurement units.

Example:

Norah bought a pumpkin that weighed 3 kilograms. How much did the pumpkin weigh in grams? (1 kg = 1,000 grams)

Answer:

3,000 grams

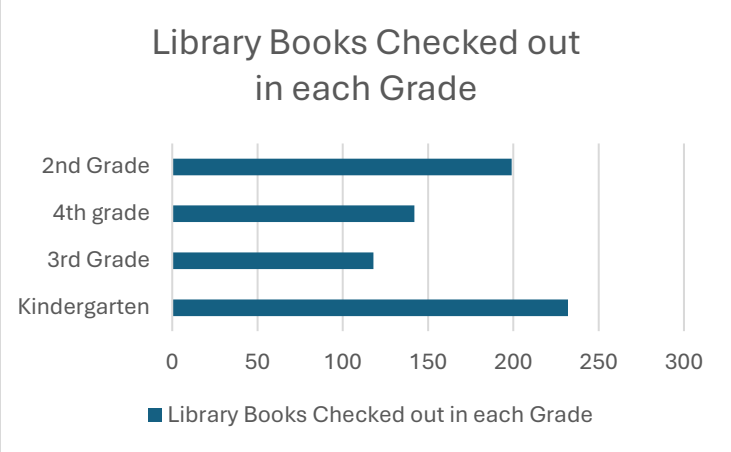
4.MDR.6.2: Ask questions and answer them based on gathered information, observations, and appropriate graphical displays to solve problems relevant to everyday life.

Students should be able to…

- generate their own questions.
- answer questions based on gathered information.
- make observations about the data.
- display and solve problems relevant to everyday life.

Example:

Which table of data could be a match for the bar graph below?



A.

Grade	Library Books
Kindergarten	132
3rd Grade	118
4th grade	102
2nd Grade	199

B.

Grade	Library Books
Kindergarten	232
3rd Grade	118
4th grade	142
2nd Grade	199

Answer:

B.