Grade 1 Advanced Math

Unit 4: Addition and Subtraction within 20

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 4.

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.

1.NR.1.1: Count within 120, forward and backward, starting at any number. In this range, read and write numerals and represent a number of objects with a written numeral.

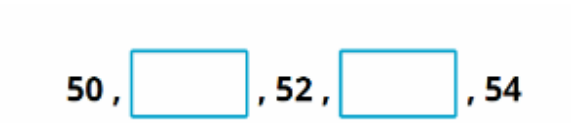
Students should be able to…

- understand that as the counting sequence increases, the value of each number increases by one or ten.
- understand that as the counting sequence decreases, the value of each number decreases by one or ten.
- count forwards and backwards by 1s from any number within 120.
- explore the counting sequences using a variety of tools. These tools can include, but are not limited to 99 charts, hundred charts, number paths, number lines (predetermined and open), etc.

Example:

- Practice counting to 120 with your child.
- Practice filling in missing numbers within a set up to 120.

1.



2.



Answers:

1. 51, 53
2. 115, 116, 117

1.NR.2.1: Use a variety of strategies to solve addition and subtraction problems within 20.

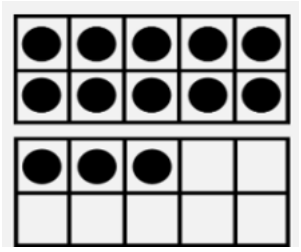
Students should be able to…

- solve problems with two or more addends.

- decompose numbers that should include, but not be limited to, tens and ones.

Example:

I have scored 13 points. How many more points do I need to make 20 points?



Answer:

7 more points.

1.NR.2.2: Use pictures, drawings, and equations to develop strategies for addition and subtraction within 20 by exploring strings of related problems.

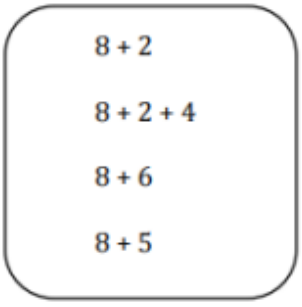
Students should be able to…

- relate counting to addition and subtraction by counting all, counting on, and counting back when making sense of practical, mathematical addition and subtraction problems within 20.
- use mental reasoning to solve problems involving number strings within 20.
- solve problem situations with an unknown in all positions.
- apply strategies developed through number strings to solve practical, mathematical problems.

Helpful Vocabulary

- number strings - sets of related problems crafted to support students to construct big ideas about mathematics and build their own strategies

Example:



Answers:

10, 14, 14, 13

1.NR.2.3: Recognize the inverse relationship between subtraction and addition within 20 and use this inverse relationship to solve authentic problems.

The students should be able to…

- understand subtraction as an unknown addend problem.

Examples:

1. Jenn had 10 pencils and gave some to Eric. Jenny now has 8 pencils. How many pencils did she give to Eric?

2. What number could go on the line to make this equation true?

14 - _____ = 6

Answers:

1. 2
2. 8

1.NR.2.4: Fluently add and subtract within 10 using a variety of strategies.

Students should be able to…

- choose flexibly among methods and strategies to solve mathematical problems accurately and efficiently.
- attend to precision.
- use well-understood strategy with ease.
- use strategies such as making 5 or making 10.

Examples:

1. There are 10 ducks in the pond. 4 more join. How many are there in all?
2. There are 15 frogs on a log. 5 hopped off. How many are there now?
3. Find the sum:

   7 +7=_____

   16+ 4=_____

Answers:

1. 10 + 4 =14
2. 15 - 5 = 5
3. 14, 20

1.NR.2.5: Use the meaning of the equal sign to determine whether equations involving addition and subtraction are true or false.

Students should be able to…

- explore and explain the relationship of the equal sign to quantities and orally justify if equations involving addition and subtraction are "true" (equal) or "false" (not equal).

Example:

Practice orally justifying if equations are "true" or "false."

6 = 6 / true or false? Why?

7 = 8 – 1/ true or false? Why?

5 + 2 = 2 + 5 / true or false? Why?

4 + 1 = 5 + 2 / true or false? Why?

Answers:

1. true, true, true, false

1.NR.2.6: Determine the unknown whole number in an addition or subtraction equation relating to three whole numbers.

The students should be able to…

- understand that symbols can be used to represent unknown amounts in equations.

Example:

Determine the unknown number that makes the equation true in each of the equations:

1. 8 + ? = 10
2. 5 = Δ – 3
3. 3 + 4 = Δ

Answers:

1. 2
2. 8
3. 7

1.NR.2.7 Apply properties of operations as strategies to solve addition and subtraction problem situations within 20.

The students should be able to…

- solve problem situations with an unknown in all positions.
- use objects, drawings, and equations to solve problems involving addition and subtraction.
- develop strategies involving the properties of operations by comparing problem solving strategies.

Note: Students at this grade level are *not* expected to know the names or identify the specific properties.

Example:

1. 8 + 3 = 11, then 3 + 8 = _____
2. 6 + 2 + 4 = _____
3. There are 15 puppies. 6 are sleeping and the rest are awake. How many are awake?

Answers:

1. 11
2. 12 (students should know that 6 + 4 =10, and then 2 more makes 12)
3. 9 puppies

1.PAR.3.2*: Identify, describe, and create growing, shrinking, and repeating patterns based on the repeated addition or subtraction of 1s, 2s, 5s, and 10s (*patterns by 1s, 2s, and 10s in unit 4).

Students should be able to…

- use a variety of tools to create patterns by 1s, 2s, and 10s.
- investigate patterns found in authentic situations.

Examples:

1. Look at the patterns below. Fill in the blanks of the next two numbers within the patterns.

A. 10, 8, 6, _____, _____ B. 11, _____, _____, 17, 19

Answers:

A. 4, 2
B. 13, 15

1.MDR.6.4*: Ask questions and answer them based on gathered information, observations, and appropriate graphical displays to compare and order whole numbers (*students are only answering questions within 20 based on given graphical information in unit 4).

Students should be able to…

- generate questions for data collection.
- use concrete models and drawings when exploring comparisons.

Example:

Present your child with this task: Write a survey question that has 3 answer choices. Survey family members or friends. Record responses with tally marks on the tally chart and numbers on the number chart. Write a question about your data.

Survey question: _____

	Tally

	Total

Question: _____

Advanced Math Standard

2.NR.2.1: Fluently add and subtract within 20.

Students should be able to…

- explain their approaches and produce accurate answers efficiently and appropriately using mental strategies that include counting on, making ten, decomposing a number leading to a ten, using the relationship between addition and subtraction, creating equivalent but easier or known sums.

Example:

Solve the following:

1. 7 + 4 = _____
2. 13 - 10 = _____
3. 8 + 5 = _____
4. 14 - 9 = _____

Answers:

1. 11
2. 3
3. 13
4. 5