

## P.S. 103 Math Family Letter

## Grade 4: Unit 4 Addition/Subtraction & Perimeter



### Student Learning Goals:

- I can explain and appropriately use the standard algorithm for addition and subtraction, using what I know about place value.
- I can solve the perimeter of an object by adding all the sides.
- I can decompose fractions and mixed numbers to add and subtract fractions with like denominators.
- I can create and explain data represented on a line plot with fractional amounts.

### Key Vocabulary:

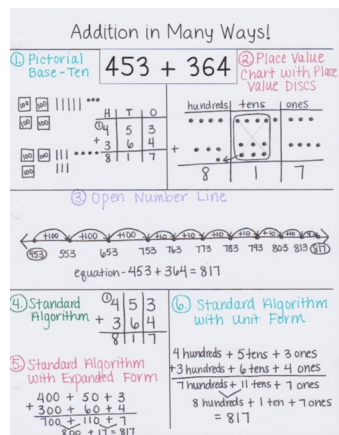
- Add, addend, addition/joining, sum, total, subtract, subtraction/separating, difference, equation, expression
- perimeter, length, width
- Fraction, unit fraction, benchmark fraction, equivalent, denominator, numerator, decomposing, mixed number, fraction greater than 1, partition(ed), comparison/compare,  $<$ ,  $>$ ,  $=$
- Data, line plot, length

### Website for Practice:

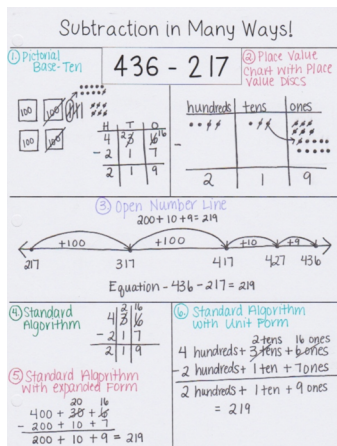
<https://www.khanacademy.org/math/4th-engage-ny/engage-4th-module-5/4th-grade-module-5-topic-e/v/interpreting-data-in-line-plots>

## Tools/Models/Strategies

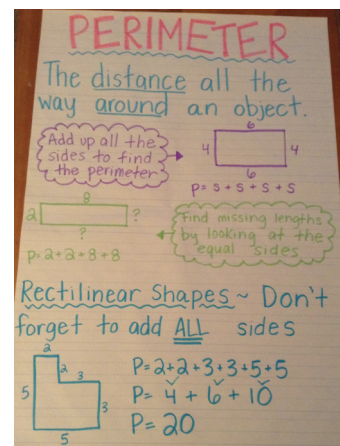
### Addition Anchor Chart:



### Subtraction Anchor Chart:



### Perimeter:



### Adding & Subtracting Fractions:

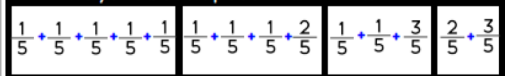
## ADDING & SUBTRACTING Fractions

**Decomposing Fractions**-breaking fractions down into smaller pieces.

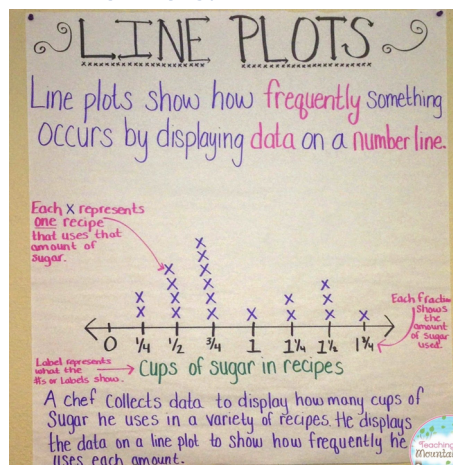
**Adding Fractions**-joining parts that refer to the same whole.

**Subtracting Fractions**-separating parts that refer to the same whole.

Ways to Decompose Four-Fifths



### Line Plots:



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**New York State Test Questions from Previous Exams**

**4.NF.2**

The table shows the height increases, in inches, of some girls in Gina's class from last month to this month.

HEIGHT INCREASES IN 1 MONTH	
Name	Height Increase (inches)
Gina	$\frac{3}{8}$
Maxine	$\frac{2}{3}$
Shari	$\frac{2}{4}$
Vanessa	$\frac{3}{12}$

What girl had a height increase that was greater than  $\frac{1}{2}$  inch?

- A Gina
- B Maxine
- C Shari
- D Vanessa

Students must identify fractions greater than  $\frac{1}{2}$ . (Answer: B)

**4.NF.2**

Which statement is true?

- A  $\frac{4}{12} > \frac{5}{8}$  because  $\frac{5}{8}$  is greater than  $\frac{1}{2}$  and  $\frac{4}{12}$  is closer to 1 than  $\frac{1}{2}$ .
- B  $\frac{4}{12} < \frac{5}{8}$  because  $\frac{4}{12}$  is less than  $\frac{1}{2}$  and  $\frac{5}{8}$  is greater than  $\frac{1}{2}$ .
- C  $\frac{5}{8} > \frac{4}{12}$  because  $\frac{4}{12}$  and  $\frac{5}{8}$  are both closer to 1 than  $\frac{1}{2}$ .
- D  $\frac{5}{8} < \frac{4}{12}$  because  $\frac{5}{8}$  and  $\frac{4}{12}$  are both less than  $\frac{1}{2}$ .

Students must work out each answer choice to find the comparison statement that is true. They have to use what they know about benchmarks of 0,  $\frac{1}{2}$ , and 1. (Answer: B)

**4.NF.3**

- 27 The three models below are each shaded to represent a different fraction.



What is the sum of the fractions represented by the shaded parts of the models?

- A  $\frac{10}{18}$
- B  $\frac{8}{10}$
- C  $\frac{10}{8}$
- D  $\frac{10}{6}$

Students must know that the denominator (unit whole size) must be the same when adding and subtracting fractions. Never add denominators. (Answer: D)

**4.MD.3**

Mr. Fuller wants to put fencing around his rectangular-shaped yard. The width of the yard is 55 feet and the length is 75 feet. How many feet of fencing does Mr. Fuller need?

- A 130
- B 260
- C 3,905
- D 4,125

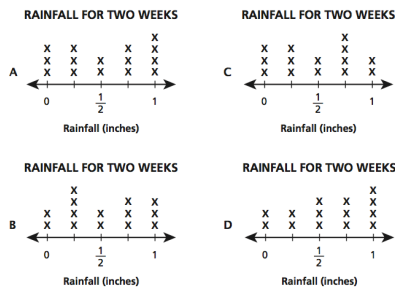
Students should know that in a rectangle the length on each side is equal and the width is equal. So when given only 2 sides, they know to double those sides and then add to find the perimeter. Fencing or enclosing something relates to finding the perimeter. (Answer: B)

**4.MD.4**

- 24 For a science project, Joseph recorded the amount of rainfall each day for 2 weeks. The table below shows his data.

RAINFALL FOR TWO WEEKS					
Inches of Rainfall	0	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{3}{4}$	1
Number of Days	3	3	2	4	2

Which line plot correctly displays Joseph's data?



In this line plot problem, students are asked to be able to take information from a table and match the line plot that shows the exact same information. Since the line plot contains fractions, they must be careful of tick marks that have no number underneath. Again, it is a type of multiple choice problem where they need to go through each choice before choosing one. (Answer: C)