

Preliminary Planning Sheet Grade 4 – Sharing Muffins

Domain(s)

Number and Operations—
Fractions¹

Standard(s)

4.NF.B.3c

Mathematical Practices

MP.1 MP.3 MP.4 MP.5 MP.6 MP.7

Major Underlying Mathematical Concepts

- Fraction notation
- Equivalent fractions
- Addition/Subtraction of mixed numbers with like denominators

Problem Solving Strategies

- Model (manipulatives)
- Diagram/Key
- Area models
- Table
- Number line

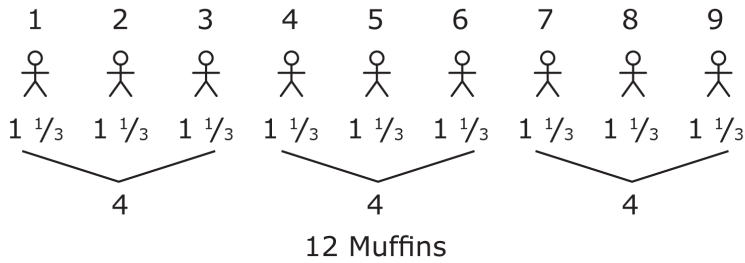
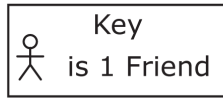
Formal Mathematical Language and Symbolic Notation

- Model
- Diagram/Key
- Table
- Area model
- Number line
- Mixed number
- Numerator/Denominator
- Whole
- Equivalent/Equal to
- Sum/Total
- Pattern
- Dozen
- Per
- $1\frac{1}{3}$, $\frac{4}{3}$...
- Greater than (>)/Less than (<)

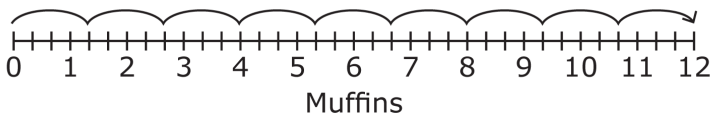
Possible Solution(s)

The nine friends shared 12 muffins equally.

Friend	Muffins	Total Muffins Eaten
1	$1 \frac{1}{3}$	$1 \frac{1}{3}$
2	$1 \frac{1}{3}$	$2 \frac{2}{3}$
3	$1 \frac{1}{3}$	$3 \frac{3}{3}$ or 4
4	$1 \frac{1}{3}$	$5 \frac{1}{3}$
5	$1 \frac{1}{3}$	$6 \frac{2}{3}$
6	$1 \frac{1}{3}$	$7 \frac{3}{3}$ or 8
7	$1 \frac{1}{3}$	$9 \frac{1}{3}$
8	$1 \frac{1}{3}$	$10 \frac{2}{3}$
9	$1 \frac{1}{3}$	$11 \frac{3}{3}$ or 12



Friends



$$\frac{3}{3} = 1 \text{ so } \frac{9}{3} = 3$$

$$9 + 3 = 12$$

Possible Connections

Below are some examples of mathematical connections. Your students may discover some that are not on this list.

- 12 muffins is a dozen.
- Half a muffin would be a bigger portion than $\frac{1}{3}$, but you would need to buy more muffins to share.
- The patterns are friend +1, muffins +1 $\frac{1}{3}$.
- Show all the improper fractions.
- Solve more than one way to verify the answer.
- Continue the pattern for more friends.
- Relate to a similar task and state a math link.