

Fraction Trail Mix

Model, compare, and solve with fractions.

GRADE 4 • TEKS 4.3

4.3 "Number and operations. The student applies mathematical process standards to represent and generate fractions to solve problems. The student is expected to: represent a fraction a/b as a sum of fractions $1/b$..."

NAME _____

DATE _____

USE EQUAL PARTS

Fractions with the same denominator name equal-size parts. Add or subtract the numerators and keep the denominator. You can also break a fraction into unit fractions, such as copies of $1/b$, and use 0, $1/2$, and 1 to check if an answer makes sense.

WORKED EXAMPLE

Mina's route progress is shaded in the bar. Write the shaded amount as unit fractions and as one different sum with denominator 8.

Mina's route



1. Count 7 shaded eighths: $7/8$.
2. Write seven copies of $1/8$.
3. Split 7 eighths into 3 eighths and 4 eighths.

Answer: $7/8 = 1/8 + 1/8 + 1/8 + 1/8 + 1/8 + 1/8 + 1/8 = 3/8 + 4/8$

PRACTICE 4 problems

- 1** The art club painted $5/6$ of a sign. Write the amount as a sum of unit fractions.

ANSWER _____

- 2** A game builder finished $2/9$ of a maze Monday and $4/9$ Tuesday. What fraction is finished? Check that the total is less than 1.

ANSWER _____

- 3** Battery A is charged $\frac{3}{10}$. Battery B is charged $\frac{4}{12}$. Use equivalent fractions to check, then write the comparison.

ANSWER _____

- 4** A snack stand sold $\frac{1}{4}$ of a tray before lunch and $\frac{2}{4}$ after lunch. How much was sold? Which benchmark matches the total?

ANSWER _____

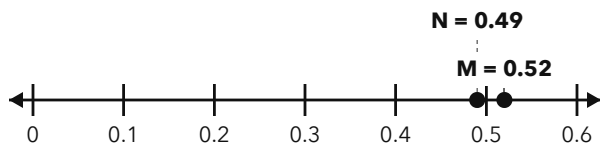
APPLY IT Show your work

- 1** Ravi cut strips from one poster roll. The two bars show the portions used for two banners. What fraction of the roll did he use altogether? Is the amount closer to $\frac{1}{2}$ or 1?



ANSWER _____

- 2** The number line shows two game tokens. Which token is farther from zero? How much farther is it?



ANSWER _____

CHALLENGE One step up

A robot travels $\frac{13}{10}$ mile on a test track. Write $\frac{13}{10}$ as a sum of $\frac{1}{10}$ s. Then write a different two-addend sum with denominator 10. Explain how you checked both sums.

WORK SPACE AND ANSWER

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	The art club painted $\frac{5}{6}$ of a sign. Write the amount as a sum of unit fractions.	$\frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6}$
2	A game builder finished $\frac{2}{9}$ of a maze Monday and $\frac{4}{9}$ Tuesday. What fraction is finished? Check that the total is less than 1.	$\frac{6}{9}$, or $\frac{2}{3}$. The total is less than 1.
3	Battery A is charged $\frac{3}{10}$. Battery B is charged $\frac{4}{12}$. Use equivalent fractions to check, then write the comparison.	$\frac{3}{10} < \frac{4}{12}$
4	A snack stand sold $\frac{1}{4}$ of a tray before lunch and $\frac{2}{4}$ after lunch. How much was sold? Which benchmark matches the total?	$\frac{3}{4}$; the benchmark is $\frac{3}{4}$.

PART 2 • APPLY IT

- $\frac{8}{12}$, or $\frac{2}{3}$; closer to $\frac{1}{2}$.** Add $\frac{5}{12}$ and $\frac{3}{12}$ to get $\frac{8}{12}$, which is $\frac{2}{3}$. Two-thirds is $\frac{1}{6}$ from $\frac{1}{2}$ and $\frac{1}{3}$ from 1.
- Token M; 0.03 farther.** Compare each token's distance from zero. Since 0.52 is greater than 0.49, M is farther, and $0.52 - 0.49 = 0.03$.

CHALLENGE

$\frac{13}{10} = \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10}$. Another sum is $\frac{4}{10} + \frac{9}{10}$. Both have 13 tenths.

Accept equivalent fraction forms, including $\frac{6}{9} = \frac{2}{3}$ and $\frac{8}{12} = \frac{2}{3}$. For the challenge, accept any correct two-addend sum with denominator 10 and any accurate explanation that both addends total 13 tenths.