

Fifth Grade

Unit 4:

Adding, Subtracting,
Multiplying, and Dividing
Fractions

BIG IDEAS

- A fraction is another representation for division.
- Fractions are relations - the size or amount of the whole matters.
- Fractions may represent division with a quotient less than one.
- Equivalent fractions represent the same value.
- With unit fractions, the greater the denominator, the smaller the equal share.
- Shares don't have to be congruent to be equivalent.
- Fractions and decimals are different representations for the same amounts and can be used interchangeably.

How are equivalent
fractions helpful when
solving problems?

As a book bag designer, I need to know how much weight my bags should hold.

The table below shows the weight of several bags.

Bag	Weight (in kilograms)
Bag 1	$4\frac{4}{6}$
Bag 2	$3\frac{2}{4}$
Bag 3	$7\frac{2}{6}$
Bag 4	$2\frac{1}{5}$

What is the combined weight of all the bags?

A grooming table for dogs has a weight limit... If I can't add fractions, how will I know if I've exceeded the safety limits of the table?

The table below shows the weight of several dogs.

Dog	Weight (in pounds)
Dog 1	$8 \frac{1}{2}$
Dog 2	$4 \frac{5}{8}$
Dog 3	$5 \frac{4}{6}$
Dog 4	$9 \frac{1}{3}$

What is the combined weight of all the dogs?

How can a fraction be
greater than 1?

How can a fraction model
help us make sense of a
problem?

How can comparing factor size to help us predict what will happen to the product?

How can decomposing fractions or mixed numbers help us model fraction multiplication?

How can decomposing fractions or mixed numbers help us multiply fractions?

How can fractions be used to describe fair shares?

How can fractions with different denominators be added together?

How can looking at patterns help us
find equivalent fractions?

How can making equivalent fractions
and using models help us solve
problems?

How can modeling an area help us
with multiplying fractions?

How can we describe how much
someone gets in a fair-share situation
if the fair share is less than 1?

- How can we describe how much someone gets in a fair-share situation if the fair share is between two whole numbers?
- How can we model an area with fractional pieces?
- How can we model dividing a unit fraction by a whole number with manipulatives and diagrams?
- How can we tell if a fraction is greater than, less than, or equal to one whole?
- How does the size of the whole determine the size of the fraction?
- What connections can we make between the models and equations with fractions?
- What do equivalent fractions have to do with adding and subtracting fractions?
- What does dividing a unit fraction by a whole number look like?
- What does dividing a whole number by a unit fraction look like?
- What does it mean to decompose fractions or mixed numbers?
- What models can we use to help us add and subtract fractions with different denominators?
- What strategies can we use for adding and subtracting fractions with different denominators?
- When should we use models to solve problems with fractions?
- How can I use a number line to compare relative sizes of fractions?
- How can I use a line plot to compare fractions?