Unit **10**

Family Letter

Reveal MATH®

Dear Family,

In this unit, Addition and Subtraction Strategies with Mixed Numbers, your child will use multiple methods to represent, add, and subtract mixed numbers.

STEM Career Kid for this Unit

Hi, I'm Ruby.

I want to be a veterinarian. I will use math in my job when I help take care of animals. I will use addition and subtraction of mixed numbers to give animals correct doses of medication.

What math terms will your child use?

Term	Student Understanding
Mixed number	A whole number and a fraction combined make a mixed number.
Decomposed fraction	Dividing a fraction into smaller fractions, so that when you add them they are equal to the original fraction.
Equivalent fraction	Fractions that seem to be different but have an equal value.

What can your child do at home?

Math @ Home Activity

Look for contexts or objects around your home that involve mixed numbers, such as measurements. Ask your child to represent the mixed numbers by drawing fraction tiles or number lines. Then have your child use addition or subtraction to compare the mixed numbers that have the same denominators.

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What Will Students Learn in this Unit?

Decomposing Mixed Numbers

Your child will learn how to decompose mixed numbers in different ways. This skill will help your child more efficiently add and subtract mixed numbers later in the unit. This process involves rewriting the mixed number as a sum of smaller numbers.

Example:

$2\frac{2}{3}$ can be decomposed in many ways. Three ways to decompose $2\frac{2}{3}$ are shown below.

$2\frac{2}{3} = 2 + \frac{2}{3}$ | $2\frac{2}{3} = 1 + 1 + \frac{1}{3} + \frac{1}{3}$ | $2\frac{2}{3} = \frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3}$

Adding Mixed Numbers

Your child will learn how to add mixed numbers using various strategies. He or she will use representations such as number lines or fraction tiles to add mixed numbers. Your child will also use decomposition to find the sums of mixed numbers, which involves adding the whole-number parts and fraction parts separately. In addition, your child will add mixed numbers by writing each mixed number as an equivalent fraction and then adding the equivalent fractions.

Example:

Find $1\frac{1}{4} + 2\frac{2}{4}$.

Decomposition

$$1\frac{1}{4} + 2\frac{2}{4}$$
$$1 + \frac{1}{4} + 2 + \frac{2}{4}$$
$$1 + 2 + \frac{1}{4} + \frac{2}{4}$$
$$3\frac{3}{4}$$

Equivalent Fractions

$$1\frac{1}{4} + 2\frac{2}{4}$$
$$\frac{5}{4} + \frac{10}{4} = \frac{15}{4}$$
$$\frac{15}{4} = \frac{4}{4} + \frac{4}{4} + \frac{4}{4} + \frac{3}{4}$$
$$\frac{15}{4} = 1 + 1 + 1 + \frac{3}{4} = 3\frac{3}{4}$$

Subtracting Mixed Numbers

Your child will learn how to subtract mixed numbers using representations, decomposition, and equivalent fractions.

Representations:	On a number line, your child will subtract by counting backwards to represent the subtracted number. When using fraction tiles, your child will remove or cross out tiles to represent subtraction.
Decomposition:	Your child will subtract the whole-number parts and then the fraction parts.
Equivalent Fractions:	Your child will write each mixed number as an equivalent fraction. Then subtract the fractions. For example, $3\frac{1}{5} - 1\frac{3}{5} = \frac{16}{5} - \frac{8}{5} = \frac{8}{5} = 1\frac{3}{5}$.

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