Unit 9, Lesson 2

Sums and Differences of Fractions

Let's practice solving problems involving fractions.

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Warm-up

Number Talk: Wholes and Units

Find the value of each expression mentally.

- $38 + 62$

- $38\frac{2}{6} + 62\frac{3}{6}$

- $38\frac{2}{6} + 62\frac{3}{6} + 17\frac{1}{6}$

- $138\frac{2}{6} + 162\frac{3}{6} + 17\frac{2}{6}$

Activity 1

Straws for a Roller Coaster

In science class, Noah, Tyler, and Jada build a model of a roller coaster out of 1-foot-long paper straws.

- Noah needs a piece that is $\frac{7}{12}$ foot long.
- Tyler needs a piece that is $\frac{1}{4}$ foot long.
- Jada needs a piece that is shorter than the other two.

Jada says, “We can use just 1 straw for all these pieces.”

1. Draw a diagram to represent this situation. Explain to your partner how it matches the situation. Then find the length of the piece of straw that could be Jada’s piece.

2. Did Noah use more than $\frac{1}{2}$ foot or less than $\frac{1}{2}$ foot of straw? Explain or show your reasoning.

3. Tyler says, “If Jada uses a piece that is $\frac{1}{6}$ foot long, there would be a piece of straw that is $\frac{1}{12}$ foot left.”

   Do you agree or disagree with Tyler? Explain your reasoning.

Activity 2

Tall Enough for a Ride?

Lin's class is on a trip to the amusement park. Visitors must be at least a certain height to get on rides. Use the table to answer these questions.

ride	height requirement
tilt and spin	52 inches
roller coaster	54 inches
bumper cars	44 inches

1. Andre is $3\frac{3}{8}$ inches shorter than the height requirement for the roller coaster. How tall is Andre?

2. Lin is $\frac{18}{8}$ inches taller than Andre. How tall is Lin?

3. Elena was $1\frac{3}{4}$ inches too short to ride the bumper cars last year. Since then she grew $4\frac{1}{2}$ inches. How tall was Elena last year? How tall is she now?

4. Mai is tall enough to ride all the rides this year. Mai was $51\frac{7}{8}$ inches tall last year. At least how many inches did Mai grow?