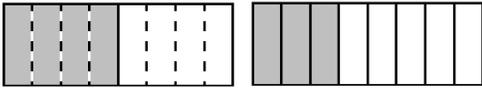
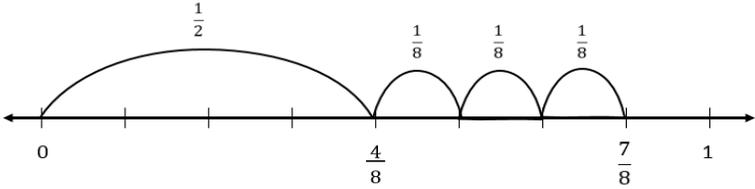


Grade 5 Important Math Information

Addition and Subtraction with Fractions

Dear Family,

Our class is beginning a unit of study in mathematics called *Addition and Subtraction with Fractions*. This unit of study focuses on adding and subtracting fractions with unlike denominators and solving measurement problems involving fractions on a line plot. The specific learning goals your student will be working toward are listed below with examples of student work showing understanding of each learning goal.

Learning Goal: Find estimated and actual answers to real-world and mathematical problems involving addition and subtraction of fractions and use models and equations to explain the thinking used.	
Example Problem	Example Student Solutions
<p>Savannah used $\frac{1}{2}$ yard of wrapping paper to wrap a present. She used $\frac{3}{8}$ yard of wrapping paper to wrap another present. How many total yards of wrapping paper did Savannah use?</p>	<p style="text-align: center;">Use Models</p> <div style="display: flex; justify-content: space-around; align-items: flex-start;">  <div style="text-align: center;"> $\frac{1}{2} + \frac{3}{8} = \frac{7}{8}$ </div> </div> <div style="margin-top: 10px;"> <div style="border: 1px solid black; padding: 5px; display: inline-block; margin-right: 20px;">Savannah used $\frac{7}{8}$ yard of wrapping paper.</div> <div style="border: 1px solid black; border-radius: 50%; padding: 10px; width: fit-content;"> <p>I drew a model and shaded it to show $\frac{1}{2}$. Then I drew another model and shaded it to show $\frac{3}{8}$. Since I need to combine the two models, I partitioned the first one into 8 equal pieces.</p> $\frac{1}{2} = \frac{4}{8}$ <p>I counted all of the shaded pieces to get $\frac{7}{8}$.</p> </div> </div>
	<p style="text-align: center;">Use a Number Line</p> <div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="border: 1px solid black; border-radius: 50%; padding: 10px; width: 40%;"> <p>I started at $\frac{1}{2}$ on the number line which is equivalent to $\frac{4}{8}$. I counted on by $\frac{1}{8}$ three times to add $\frac{3}{8}$ and stopped at $\frac{7}{8}$.</p> </div> <div style="text-align: center;"> $\frac{1}{2} + \frac{3}{8} = \frac{7}{8}$ </div> <div style="border: 1px solid black; padding: 5px; display: inline-block; margin-left: 20px;">Savannah used $\frac{7}{8}$ yard of wrapping paper.</div> </div> <div style="text-align: center; margin-top: 10px;">  </div>

Learning Goal: Make a line plot to display a set of measurements to the nearest fraction of a unit ($\frac{1}{2}$, $\frac{1}{4}$, and $\frac{1}{8}$) and add and subtract fractions to solve problems involving information presented on a line plot.

Example Problems

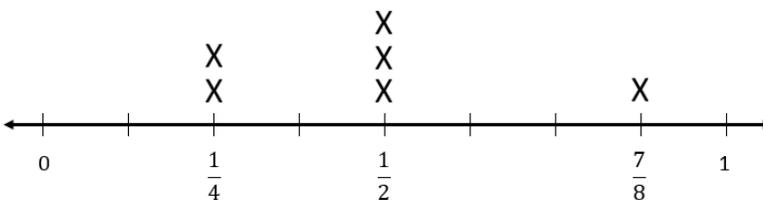
The line plot shows the number of miles Cooper ran during his PE classes last month. How many total miles did Cooper run last month?



Example Student Solutions

Combine "Friendly" Fractions

To find the total number of miles that Cooper ran last month I added $\frac{1}{4} + \frac{1}{4}$ which equals $\frac{2}{4}$. Then I added $\frac{1}{2} + \frac{1}{2} + \frac{1}{2}$ which equals $1\frac{1}{2}$. I know that $\frac{2}{4} = \frac{1}{2}$, so $\frac{1}{2} + 1\frac{1}{2} = 2$. Next, I added $\frac{7}{8}$ of a mile to 2 and got $2\frac{7}{8}$ miles.



Cooper ran $2\frac{7}{8}$ miles last month.

The line plot shows the number of miles Cooper ran during his PE classes last month. How many miles difference is there between the longest distance he ran and the shortest distance?



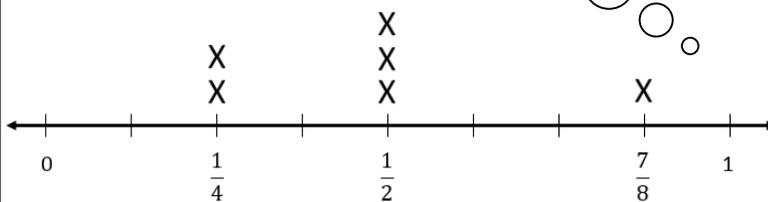
$$\frac{7}{8} - \frac{1}{4}$$

$$\frac{7}{8} - \frac{2}{8} = \frac{5}{8}$$

There is $\frac{5}{8}$ mile difference between the longest distance he ran and the shortest distance.

Find Common Denominators

To find the difference, I need to subtract $\frac{1}{4}$ from $\frac{7}{8}$. It is easier to subtract when the denominators are the same. Since $\frac{1}{4} = \frac{2}{8}$, I can subtract $\frac{7}{8} - \frac{2}{8}$.



Mathematical Thinking and Practices Learning Goal: I can solve problems accurately and communicate my thinking precisely.



Things you can do at home to support your student throughout this unit of study:

Add and Subtract Fractions in Real Life:

- When doing laundry: "If one load of laundry uses $\frac{1}{2}$ cup of detergent, how much detergent will we need for 3 loads of laundry?"
- When baking: "If this recipe calls for $\frac{3}{4}$ cup of flour, and we are doubling the recipe, how much flour do we need?"
- Look for examples of number lines with fractions, whole numbers and unmarked numbers. These can be found on measuring cups, speedometers, rulers, and thermometers. Point these out to your student and ask him/her questions that he/she can solve by adding and/or subtracting fractions.