

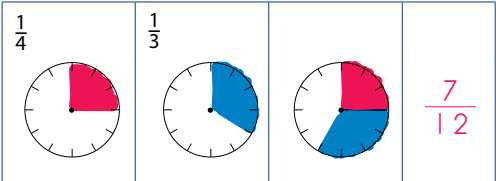
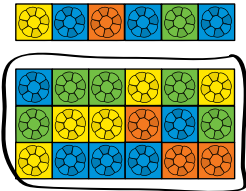
Adding & Subtracting Fractions

In this unit, your student will:

- Add and subtract fractions with unlike denominators
- Solve word problems involving addition and subtraction of fractions with unlike denominators
- Find common denominators for fractions with unlike denominators
- Find the greatest common factor and least common multiple to help simplify fractions and find common denominators



Your student will practice these skills by solving problems such as these:

PROBLEM	COMMENTS
<p>Show the fractions on the clocks. Then add them and report the sum.</p>  <p>$\frac{1}{4} = \frac{15}{60}$ $\frac{1}{3} = \frac{20}{60}$</p>	<p>The contexts of time and money are a good way to invite students to think about adding and subtracting fractions with like and unlike denominators.</p> <p>We can represent any fraction in which the denominator is a factor of 60 on a clock face.</p> $\frac{15}{60} + \frac{20}{60} = \frac{35}{60}$ $\frac{35}{60} = \frac{7}{12}$
<p>What is:</p> <p>$\frac{1}{5}$ of 60? <u>12</u></p> <p>$\frac{1}{4} \times 60$? <u>15</u></p> <p>$\frac{1}{4}$ of 100? <u>25</u></p> <p>$\frac{1}{10} \times 100$? <u>10</u></p>	<p>Students multiply unit fractions (fractions with a 1 in the numerator) by whole numbers. Students can find, for example, $\frac{1}{5}$ of 60 by dividing 60 by 5 and that this can be represented with multiplication notation.</p>
<p>What is:</p> <p>$\frac{3}{4}$ of 24</p> <p>$(\frac{3}{4} \times 24)$</p> 	<p>Students begin to explore multiplying a fraction times a whole number in a number string during this unit.</p> <p><i>I know $\frac{3}{4}$ of 24 is equal to $\frac{1}{4}$ of 24 times 3.</i></p> <p><i>So $\frac{1}{4}$ of 24 is 6, and 6 times 3 is equal to 18.</i></p> $\frac{3}{4} \times 24 = 3 \times (\frac{1}{4} \times 24)$ $= 3 \times 6$ $= 18$

PROBLEM	COMMENTS																		
<p>Find the sum. $\frac{2}{3} + \frac{5}{8} =$</p> <p>Equivalent Fractions for $\frac{2}{3}$</p> <table><tr><td>numerator</td><td>2</td><td>4</td><td>8</td><td>16</td></tr><tr><td>denominator</td><td>3</td><td>6</td><td>12</td><td>24</td></tr></table> <p>Equivalent Fractions for $\frac{5}{8}$</p> <table><tr><td>numerator</td><td>5</td><td>10</td><td>15</td></tr><tr><td>denominator</td><td>8</td><td>16</td><td>24</td></tr></table>	numerator	2	4	8	16	denominator	3	6	12	24	numerator	5	10	15	denominator	8	16	24	<p>Ratio tables are often used when multiplying or dividing whole numbers. Here, we see another use for ratio tables: finding equivalent fractions in order to add fractions with unlike denominators.</p> $\frac{2}{3} + \frac{5}{8} = \frac{16}{24} + \frac{15}{24} = \frac{31}{24} \text{ or } 1\frac{7}{24}$
numerator	2	4	8	16															
denominator	3	6	12	24															
numerator	5	10	15																
denominator	8	16	24																
<p>Find the difference.</p> $\frac{8}{15} - \frac{3}{6} =$ $\frac{8}{15} \times \frac{2}{2} = \frac{16}{30}$ $\frac{3}{6} \times \frac{5}{5} = \frac{15}{30}$ $\frac{16}{30} - \frac{15}{30} = \frac{1}{30}$	<p>Later in the unit, students will draw upon their understanding of factors, multiples and equivalent fractions to find a common denominator so that they are able to add or subtract a pair of fractions.</p>																		

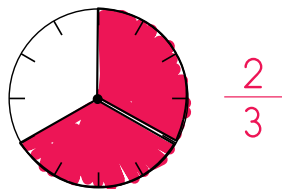
For additional support, you can use the Math Vocabulary Cards app at apps.mathlearningcenter.org.

Frequently Asked Questions About Unit 2

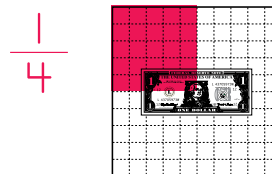
Q: Why do so many of the fraction problems use time and money?

A: The clock face and a whole dollar are versatile models. The contexts of time and money are natural ways to help students think about adding and subtracting fractions with like or unlike denominators.

- Any fraction with a denominator that is a factor of 60 (that is, 2, 3, 4, 5, 6, 10, 12, 15, 20, or 30) can be represented as part of the 60 minutes in a whole hour.
- Any fraction with a denominator that is a factor of 100 (that is, 2, 4, 5, 10, 20, 25, or 50) can be represented as part of the 100 cents in a whole dollar.



When students represent $\frac{2}{3}$ as part of a whole hour, they can see that it is also equivalent to $\frac{8}{12}$, $\frac{40}{60}$, and $\frac{4}{6}$.



When students represent $\frac{1}{4}$ as part of a whole dollar (100 cents in the whole grid), they can see that it is equivalent to $\frac{25}{100}$.

Q: How can I support my student's learning?

A: Invite students to talk about their work with fractions in school. At the beginning of the unit, they may not be adding or subtracting fractions the same way you were taught, but more generalizable strategies for finding common denominators are explored and taught later in the unit. Share with them any ways you use fractions in your life, such as baking, building, or sharing. To further support your student in learning mathematics, you can:

- Visit mathathome.mathlearningcenter.org and work through some or all of the activities in Grade 5: Set 2 together. These activities complement the learning that takes place in the classroom during Unit 2 and provide fun ways to engage children in mathematical thinking. This set also includes digital versions of games that your student has learned at school, such as Racing Fractions.
- Visit apps.mathlearningcenter.org and invite your student to explore the Math Clock and Money Pieces apps. Throughout Unit 2, students explore these tools in their physical forms in the classroom.
- If your student would enjoy learning about math concepts through literature, consider looking for math-related books at your local library. Some suggestions include:
 - » *Sir Cumference and the Fracton Faire* by Cindy Neuschwander, illustrated by Wayne Geehan