

## Grade 4

<b>Unit</b>  <b>3.1</b>	<b>Unit Title</b> <b>Addition and Subtraction of Fractions</b>	<b>Lesson</b>  <b>1 of 3</b>	<b>Day</b>  <b>1-3</b>
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### Lesson Focus

1. Standards Addressed	2. Content to be Learned	3. Mathematical Practices	4. Essential Question
<b>4.NF.3</b> Understand a fraction $a/b$ with $a > 1$ as a sum of fractions $1/b$ . a. Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.	Understand that to add or to subtract fractions, they must refer to parts of the same-size wholes.	<b>SMP4</b> Model with mathematics.	When can you add or subtract parts of a whole?
5. Prerequisite Knowledge	6. Essential Vocabulary	7. Possible Misconceptions	8. Necessary Materials
<ul style="list-style-type: none"> <li>•Use a fraction to name a part of a whole that has been divided into equal parts.</li> <li>•Understand addition as joining together. Understanding subtraction as taking away.</li> </ul>	Numerator Denominator Common denominator	Students may think you add numerators and denominators when adding fractions.	<b>OnCore</b> Lesson 55 Student pp. 109-110 Fraction strips  <b>Investigations</b> Unit 6 Session 1.8A Resource Book pp. 29-31  K-5 Math Resources – activities for 4.NF.3a: <a href="http://www.k-5mathteachingresources.com/4th-grade-number-activities.html">http://www.k-5mathteachingresources.com/4th-grade-number-activities.html</a>

### Instruction

9. Instruction Practices (What are the teachers doing)	10. Learning Practices (What are the students doing)
Teachers will guide children to understand that to add or subtract fractions they must refer to parts of the same-size whole following the lesson guidelines in OnCore lesson 55 (TM p. 58), teachers will: Remind students they learned how to use a fraction to represent a part of a whole that has been divided into parts and tell them they now will learn how they can use fractions to describe what happens when parts are joined together or taken away. Show students addition and subtraction models and discuss how to write an equation that describes the same amount. Teachers will be following lesson activities from Investigations Unit 6 session 1.8A materials. (TM pp. CC48-51) In the activities teachers will: Ask students to solve a problem by draw a model to subtract fractions. Ask students to write an equation to represent the problem.	In Lesson 55 students will: <ul style="list-style-type: none"> <li>•Add and subtract fractions.</li> <li>•Use a model to write an equation.</li> <li>•Explain which models show an addition and which show a subtraction.</li> <li>•Complete student pp.109-110</li> </ul> In Investigations Unit 6 Session 1.8A students will: <ul style="list-style-type: none"> <li>• Use visual representations to subtract fractions with like denominators.</li> <li>•Complete Resource Book pp. 29-31</li> </ul> <ul style="list-style-type: none"> <li>•Add and subtract fraction from the activities at K-5 Math Resources</li> </ul>

## Grade 4

<b>Unit</b> <b>3.1</b>	<b>Unit Title</b> <b>Addition and Subtraction of Fractions</b>	<b>Lesson</b> <b>2 of 3</b>	<b>Day</b> <b>4-7</b>
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### Lesson Focus

1. Standards Addressed	2. Content to be Learned	3. Mathematical Practices	4. Essential Question
<p><b>4.NF.3</b> Understand a fraction <math>a/b</math> with <math>a &gt; 1</math> as a sum of fractions <math>1/b</math>.</p> <p>b. Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model. Examples: <math>3/8 = 1/8 + 1/8 + 1/8</math>; <math>3/8 = 1/8 + 2/8</math>; <math>2 \frac{1}{8} = 1 + 1 + 1/8 = 8/8 + 8/8 + 1/8</math></p>	Decompose a fraction by writing it as a sum of fractions with the same denominators.	<p><b>SMP7</b> Look for and make use of structure.</p> <p><b>SMP6</b> Attend to precision.</p>	<ul style="list-style-type: none"> <li>•How can you write a fraction as a sum of fractions with the same denominators?</li> <li>•How can you rename mixed numbers as fractions greater than 1 and rename fractions greater than 1 as mixed numbers.</li> </ul>
5. Prerequisite Knowledge	6. Essential Vocabulary	7. Possible Misconceptions	8. Necessary Materials
<ul style="list-style-type: none"> <li>•Use a fraction to name a part of a whole that has been divided into equal parts.</li> <li>•Write an addition equation to represent a joining of quantities.</li> <li>•Add and multiply whole numbers.</li> <li>•Divide whole numbers with remainders.</li> <li>•Decompose a fraction by writing it as a sum.</li> </ul>	<p>Unit fraction</p> <p>Mixed number</p>		<p><b>OnCore</b> Lessons 56-57</p> <p>Student pp. 111-114</p> <p>K-5 Math Resources -Decomposing fractions in different ways activity:</p> <p><a href="http://www.k-5mathteachingresources.com/support-files/decomposingfractions4nf3b.pdf">http://www.k-5mathteachingresources.com/support-files/decomposingfractions4nf3b.pdf</a> and</p> <p><a href="http://www.k-5mathteachingresources.com/support-files/pizza-share.pdf">http://www.k-5mathteachingresources.com/support-files/pizza-share.pdf</a></p>

### Instruction

9. Instruction Practices (What are the teachers doing)	10. Learning Practices (What are the students doing)
Teachers will guide children to decompose a fraction as a sum of fractions with the same denominators and write fractions greater than 1 as a mixed number and write a mixed numbers as fractions greater than 1 following the lesson guidelines in OnCore lessons 56-57 (TM p. 59-60), teachers will: Introduce the lesson by writing whole numbers as the sum of other whole numbers and then tell students they will learn how to write a fraction as a sum of other fractions. Remind students that a fraction with the numerator and the denominator (like $5/5$ ) is equal to 1. Lead them to see fractions with numerators larger than the denominator (like $6/5$ ) represent an amount greater than 1. Discuss the meaning of the term mixed number and point out that dividing 16 by 3 shows how many groups of 3 thirds are in 16 units.	<p>In Lessons 56-57 students will:</p> <ul style="list-style-type: none"> <li>• Recognize the numerator in a fraction is the same as the number of addends in the sum of the unit fractions.</li> <li>•Write fractions as the sum of unit fractions.</li> <li>•Write fractions as different possible sums.</li> <li>•Write mixed numbers as a fraction greater than one.</li> <li>•Write fractions greater than 1 as a mixed number.</li> <li>•Complete student pp.111-114</li> <li>•Decompose fraction from the activities at K-5 Math Resources</li> </ul>

## Lesson Alignment Guide – Mathematics Cranston Public Schools

## Grade 4

<b>Unit</b>  <b>3.1</b>	<b>Unit Title</b> <b>Addition and Subtraction of Fractions</b>	<b>Lesson</b>  <b>3 of 3</b>	<b>Day</b>  <b>8-10</b>
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### Lesson Focus

1. Standards Addressed	2. Content to be Learned	3. Mathematical Practices	4. Essential Question
<p><b>4.NF.3</b> Understand a fraction <math>a/b</math> with <math>a &gt; 1</math> as a sum of fractions <math>1/b</math>. d. Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem.</p>	<ul style="list-style-type: none"> <li>•Use models to represent and find sums and differences involving fractions.</li> <li>•Solve word problems involving addition and subtraction with fraction.</li> <li>•Use the strategy act it out to solve multistep problems with fractions.</li> </ul>	<p><b>SMP1</b> Make sense of problems and persevere in solving them.  <b>SMP2</b> Reason Abstractly and quantitatively.  <b>SMP7</b> Look for and make use of structure.</p>	<ul style="list-style-type: none"> <li>•How can you add and subtract fractions with like denominators using models?</li> <li>•How can you add and subtract fractions with like denominators?</li> <li>•How can you use the strategy act it out to solve multistep problems with fractions?</li> </ul>
5. Prerequisite Knowledge	6. Essential Vocabulary	7. Possible Misconceptions	8. Necessary Materials
<ul style="list-style-type: none"> <li>•Represent fractions on a number line.</li> <li>•Represent a fraction as part of a whole that has been divided into equal parts.</li> <li>•Decompose a fraction as a sum of unit fractions with the same denominator.</li> <li>•Use models to represent sums and differences involving fractions.</li> <li>•Write fractions in simplest form.</li> <li>•Model addition and subtraction of fractions and mixed numbers with like denominators.</li> </ul>			<p>OnCore Lessons 61-64            Student pp. 121-128            Fraction strips            K-5 MathResources – activities for 4.NF3d.  <a href="http://www.k-5mathteachingresources.com/4th-grade-number-activities.html">http://www.k-5mathteachingresources.com/4th-grade-number-activities.html</a></p>

### Instruction

9. Instruction Practices (What are the teachers doing)	10. Learning Practices (What are the students doing)
<p>Teachers will guide children to use models to represent and find sums and differences involving fractions, solve word problems involving addition and subtraction with fractions, use the strategy <i>act it out</i> to solve multistep fraction problems following the lesson guidelines in OnCore lessons 61-64 (TM p. 64-67), teachers will:</p> <p>Review how to show a fraction on a number line stressing that the distance between 0 and 1 is divided into a number of parts equal to the denominator of the fraction. Guide students to see that two distances on the number line are being combined and that the shading of one begins at the end of the shading for the other. Remind students that they used fraction strips to add fractions and that they can use them to subtract them. Ask students how modeling an addition of fractions with strips is different from modeling a subtraction. Ask students to describe how the numerator and the denominator of the sum or differences are related to the numerators and denominators of the fractions being added or subtracted. Work with students to model a repeated-addition problem using fraction strips.</p>	<p>In Lessons 56-57 students will:</p> <ul style="list-style-type: none"> <li>• Add fractions using a number line.</li> <li>•Subtract fractions using a fraction strips.</li> <li>•Find sums and differences of two fractions.</li> <li>•Solve multistep fraction problems.</li> <li>•Complete student pp.121-128</li> </ul> <p>•Solve multistep fraction problems from the activities at K-5 Math Resources</p>