Summary of Connections with the Common Core State Standards

The following connections are also featured at the beginning of each of the corresponding chapters; they are included here as well for quick reference.

Chapter	CCSS Content Standards: Number and Operations: Fractions (NF); Geometry (G)
1 Making Sense: **Fractions as Numbers**	**Prerequisite Standards** **2.G.A.3:** Partition circles and rectangles into two, three, or four equal shares, describe the shares using the words halves, thirds, half of, a third of, etc., and describe the whole as two halves, three thirds, four fourths. Recognize that equal shares of identical wholes need not have the same shape. **Standards Addressed** **3.NF.A.1:** Understand a fraction $\frac{1}{b}$ as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction $\frac{a}{b}$ as the quantity formed by [a] parts of size $\frac{1}{b}$. **3.NF.A.2:** Understand a fraction as a number on the number line; represent fractions on a number line diagram. **3.NF.A.3:** Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size. **4.NF.B.3:** Understand a fraction $\frac{a}{b}$ with $a > 1$ as a sum of fractions $\frac{1}{b}$.
3 Making Sense: **Addition with Fractions**	**Prerequisite Standards** **3.NF.A.1:** Understand a fraction $\frac{1}{b}$ as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction $\frac{a}{b}$ as the quantity formed by [a] parts of size $\frac{1}{b}$. **3.NF.A.2:** Understand a fraction as a number on the number line; represent fractions on a number line diagram. **Standards Addressed** **4.NF.B.3:** Understand a fraction $\frac{a}{b}$ with $a > 1$ as a sum of fractions $\frac{1}{b}$. **4.NF.B.3a:** Understand addition and subtraction of fractions as joining and separating parts referring to the same whole. **4.NF.B.3b:** 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. **4.NF.B.3c:** Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction. **5.NF.A.1:** Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators.

Chapter	CCSS Content Standards: Number and Operations: Fractions (NF); Geometry (G)
4 Making Sense: Subtraction with Fractions	**Prerequisite Standards** **3.NF.A.1:** Understand a fraction $\frac{1}{b}$ as the quantity formed by 1 part when *a* whole is partitioned into *b* equal parts; understand a fraction $\frac{a}{b}$ as the quantity formed by *a* parts of size $\frac{1}{b}$. **3.NF.A.2:** Understand a fraction as a number on the number line; represent fractions on a number line diagram. **Standards Addressed** **4.NF.B.3:** Understand a fraction $\frac{a}{b}$ with *a* > 1 as a sum of fractions $\frac{1}{b}$. **4.NF.B.3a:** Understand addition and subtraction of fractions as joining and separating parts referring to the same whole. **4.NF.B.3b:** 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. **4.NF.B.3c:** Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction. **5.NF.A.1:** Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators.
6 Making Sense: Multiplication with Fractions	**Prerequisite Standards** **3.NF.A.1:** Understand a fraction $\frac{1}{b}$ as the quantity formed by 1 part when a whole is partitioned into *b* equal parts; understand a fraction $\frac{a}{b}$ as the quantity formed by *a* parts of size $\frac{1}{b}$. **Standards Addressed** **4.NF.B.3:** Understand a fraction $\frac{a}{b}$ with *a* > 1 as a sum of fractions $\frac{1}{b}$. **4.NF.B.4:** Apply and extend previous understandings of multiplication to multiply a fraction by a whole number. **5.NF.B.4:** Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction. **5.NF.B.6:** Solve real-world problems involving multiplication of fractions and mixed numbers.

Chapter	CCSS Content Standards: Number and Operations: Fractions (NF); Geometry (G)
7 Making Sense: Division with Fractions	**Prerequisite Standards** **3.NF.A.1:** Understand a fraction $\frac{1}{b}$ as the quantity formed by 1 part when a whole is partitioned into *b* equal parts; understand a fraction $\frac{a}{b}$ as the quantity formed by *a* parts of size $\frac{1}{b}$. **3.NF.A.2:** Understand a fraction as a number on the number line; represent fractions on a number line diagram. **4.NF.B.3:** Understand a fraction $\frac{a}{b}$ with *a* > 1 as a sum of fractions $\frac{1}{b}$. **5.NF.B.3:** Interpret a fraction as division of the numerator by the denominator ($\frac{a}{b} = a \div b$). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem. **Standards Addressed** **5.NF.B.7:** Apply and extend previous understanding of division to divide unit fractions by whole numbers and whole numbers by unit fractions. **6.NS.A.1:** Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem.