ELG 5.NF.A Use equivalent fractions as a strategy to add and subtract fractions

Vertical Progression:

3rd Grade	**3.NF.A Develop understanding of fractions as numbers.** ○ **3.NF.A.1** Understand a fraction 1/b as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size 1/b. ○ **3.NF.A.3** Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size**.** ○ **3.NF.A.3.a.** Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line. ○ **3.NF.A.3.b** Recognize and generate simple equivalent fractions (e.g., 1/2=2/4, 4/6=2/3). Explain why the fractions are equivalent, e.g. by using visual fraction models. ○ **3.NF.A.3.c** Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers.
4th Grade	**4.NF.B Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.** ○ **4.NF.B.3** Understand a fraction a/b with a > 1 as a sum of fractions 1/b. ○ **4.NF.B.3.a** Understand addition and subtraction of fractions as joining and separating parts referring to the same whole. ○ **4.NF.B.3.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. ○ **4.NF.B.3.c** 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. ○ **4.NF.B.3.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.
5th Grade	**5.NF.A Use equivalent fractions as a strategy to add and subtract fractions.** ○ **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. ○ **5.NF.A.2** Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers.
6th Grade	**6.NS.A Apply and extend previous understandings of multiplication and division to divide fractions by 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.

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Students will demonstrate command of the ELG by:

- Solving word problems involving addition and subtraction of fractions.
- Calculating the sum and difference of fractions with like and unlike denominators.
- Creating equivalent fractions by finding common denominators.
- Creating a model showing equivalent fractions.
- Using benchmark fractions and number sense of fractions to estimate mentally and access the reasonableness of answers.

Vocabulary:

- common denominator
- denominator
- difference
- equivalent
- fraction

- improper fraction
- mixed numbers
- numerator
- sum
- unlike denominator

Sample Instructional/Assessment Tasks:

1) **Standards:** 5.NF.A.1/5.NF.A.2

Item Prompt:

Mr. Goben has two bottles of Gatorade. He drank $\frac{5}{8}$ of them in the morning and $1\frac{1}{4}$ in the afternoon. How much Gatorade does Mr. Goben have left?

Correct Answer:

Mr. Goben has $\frac{1}{8}$ of his 2 bottles of Gatorade.

Students can use various strategies (visual models or equations) to find their answer.

2) Standards: 5.NF.A.1/5.NF.A.2

Item Prompt:

Sha'kya and Tangela both walk to school in the morning. Sha'kya walks $1\frac{1}{6}$ miles to school. In total, both girls walk $2\frac{10}{12}$ miles to school.

        a. How far does Tangela walk to get to school?
        b. Who walks the farthest?

Correct Answer:

    a. $1\frac{8}{12}$ miles
    b. Tangela