Bright Horizons Academy

Grade 5: Mathematics

Adding and Subtracting Fractions (With Unlike Denominators)

Objective:

Students will learn how to *find* a common denominator, *adjust* fractions, and *accurately* add or subtract fractions with different denominators.

Core Content:

When adding or subtracting fractions with different denominators, you first need to find a **common denominator** (a number *both* denominators can divide into.)

Once you find it, rewrite the fractions so they have the same denominator by multiplying the **numerator** and **denominator** by the same number.

Then keep the denominator the same, and only add or subtract the **numerators**.

Finally, **simplify** the fraction if possible. Divide the numerator and denominator by their **greatest common factor**.

Examples:

1. 1/4 + 1/6
    a. Find the common denominator (12)

    b. Convert the fractions:
        i. 1/4 = 3/12
        ii. 1/6 = 2/12

    c. Add the numerators: 3/12 + 2/12 = 5/12

    d. Simplify (if needed): Already simplified

2. 2/3 – 1/9:
    a. Find the common denominator (9)

    b. Convert the fractions:
        i. 2/3 = 6/9

    c. Subtract the numerators: 6/9 – 1/9 = 5/9

3. 3/8 + 1/4:
    a. Find the common denominator (8)

    b. Convert the fractions:
        i. 1/4 = 2/8

    c. Add the numerators: 3/8 + 2/8 = 5/8

Practice Questions:

Try these problems to practice adding and subtracting fractions with unlike denominators.

1. 1/2 + 1/3 =?

2. 3/5 – 1/10 =?

3. 2/3 + 1/6 =?

4. 5/8 – 1/4 =?

5. 1/6 + 1/3 =?

Answers to Practice Questions:

1. Common denominator 6:
    - 1/2 = 3/6
    - 1/3 = 2/6
    - 3/6 + 2/6 = 5/6

2. Common denominator 10:
    - 3/5 = 6/10
    - 6/10 – 1/10 = 5/10 = 1/2

3. Common denominator 6:
    - 2/3 = 4/6
    - 4/6 + 1/6 = 5/6

4. Common denominator 8:
    - 1/4 = 2/8
    - 5/8 – 2/8 = 3/8

5. Common denominator 6:
    - 1/3 = 2/6
    - 1/6 + 2/6 = 3/6 = 1/2