Year 6 Number- Fractions

In this unit, I will:

- Simplify fractions
- Compare and order fractions
- Add and subtract fractions including mixed numbers
- Solve problems involving adding and subtracting fractions

How does this unit build on prior learning?

In this unit, children extend their understanding of fractions and mixed numbers by adding and subtracting unrelated fractions using formal written methods involving finding common denominators. Children continue to develop their reasoning and problem-solving skills while exploring efficient methods.

Before they start this unit, it is expected that children:
• Can find factors and multiples of numbers using multiplication facts
• Can find equivalent fractions and convert between improper fractions and mixed numbers
• Can compare and order fractions and add and subtract fractions which have the same denominator.

National Curriculum Link - Year 6 Fractions

- Use common factors to simplify fractions; use common multiples to express fractions in the same denomination
- Compare and order fractions, including fractions > 1
- Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions.

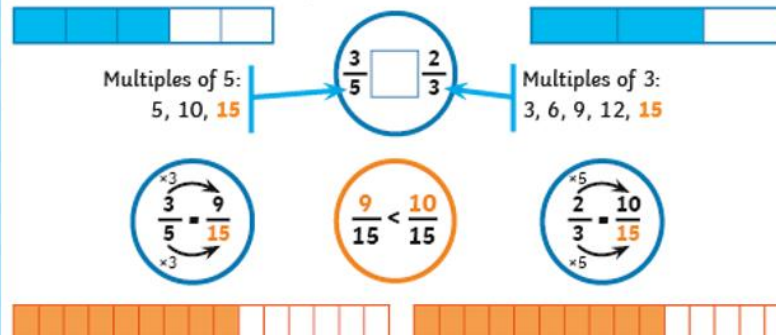## Simplify Fractions

$$\frac{9}{12}$$

Factors of 9: 1, **3**, 9

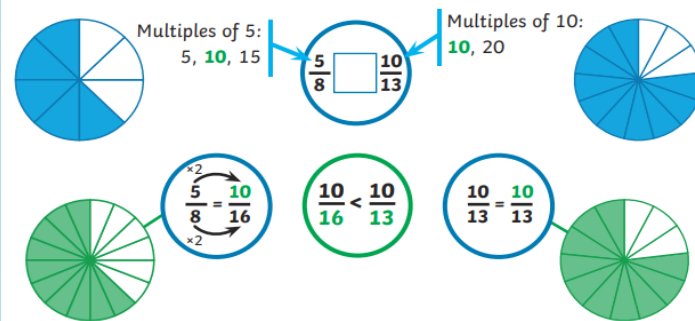Factors of 12: 1, 2, **3**, 4, 6, 12

$$\frac{9}{12} = \frac{3}{4}$$ (÷3)

Compare and Order Fractions

Use the Common Denominator

$$\frac{3}{5} \square \frac{2}{3}$$

Multiples of 5: 5, 10, **15**

Multiples of 3: 3, 6, 9, 12, **15**

$$\frac{3}{5} = \frac{9}{15}$$ (×3) $$\frac{9}{15} < \frac{10}{15}$$ $$\frac{2}{3} = \frac{10}{15}$$ (×5)

Use the Common Numerator

$$\frac{5}{8} \square \frac{10}{13}$$

Multiples of 5: 5, **10**, 15

Multiples of 10: **10**, 20

$$\frac{5}{8} = \frac{10}{16}$$ (×2) $$\frac{10}{16} < \frac{10}{13}$$ $$\frac{10}{13} = \frac{10}{13}$$

Adding and Subtracting Mixed Numbers

Add or subtract the whole numbers and fractions separately.

$$2\frac{2}{5} + 1\frac{3}{10}$$

$$2+1=3$$

$$\frac{2}{5} + \frac{3}{10} = \frac{4}{10} + \frac{3}{10} = \frac{7}{10}$$

$$3 + \frac{7}{10} = 3\frac{7}{10}$$

$$2\frac{1}{2} - 1\frac{1}{4}$$

$$2-1=1$$

$$\frac{1}{2} - \frac{1}{4} = \frac{2}{4} - \frac{1}{4} = \frac{1}{4}$$

$$1 + \frac{1}{4} = 1\frac{1}{4}$$

Convert the mixed numbers to improper fractions.

$$2\frac{2}{5} + 1\frac{3}{10}$$

$$2\frac{2}{5} = \frac{12}{5} \quad 1\frac{3}{10} = \frac{13}{10}$$

$$\frac{12}{5} + \frac{13}{10} = \frac{24}{10} + \frac{13}{10} = \frac{37}{10}$$

$$\frac{37}{10} = 3\frac{7}{10}$$

$$2\frac{1}{2} - 1\frac{1}{4}$$

$$2\frac{1}{2} = \frac{5}{2} \quad 1\frac{1}{4} = \frac{5}{4}$$

$$\frac{5}{2} - \frac{5}{4} = \frac{10}{4} - \frac{5}{4} = \frac{5}{4}$$

$$\frac{5}{4} = 1\frac{1}{4}$$

Adding and Subtracting Proper Fractions

Same Denominators

$$\frac{4}{7} + \frac{2}{7} = \frac{6}{7}$$ $$\frac{8}{11} - \frac{3}{11} = \frac{5}{11}$$

Different Denominators

$$\frac{2}{7} + \frac{3}{5}$$

Multiples of 7: 7, 14, 21, 28, **35**
Multiples of 5: 5, 10, 15, 20, 25, 30, **35**

$$\frac{2}{7} = \frac{10}{35}, \frac{3}{5} = \frac{21}{35}$$

$$\frac{10}{35} + \frac{21}{35} = \frac{31}{35}$$

$$\frac{9}{10} - \frac{1}{4}$$

Multiples of 10: 10, **20**
Multiples of 4: 4, 8, 12, 16, **20**

$$\frac{9}{10} = \frac{18}{20}, \frac{1}{4} = \frac{5}{20}$$

$$\frac{18}{20} - \frac{5}{20} = \frac{13}{20}$$

Key vocabulary

Term	Definition
numerator	The number above the line in a fraction
denominator	The number below the line in a fraction.
common denominator	a common multiple of the denominators of several fractions.
common factor	a whole number that divides. two or more other numbers exactly.
equivalent	Fractions which have the same value, even though they may look different.
simplify	Reduce the numerator and denominator in a. fraction to the smallest numbers possible.
highest common factor (HCF)	The highest number that can be divided exactly into each of two or more numbers.
lowest common factor (LCF)	The highest number that can be divided exactly into each of two or more numbers.
compare	To look the differences between numbers, quantities or values to decide if it is greater than, smaller than or equal to another quantity.
ascending order	Arranged from smallest to largest.
descending order	Arranged from largest to smallest.
improper fraction	A fraction whose numerator is larger than the denominator.
mixed number	A mixture of a whole number and a fraction.
convert	To change a value from one form to another.

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