Year 6 Fractions

MATHS KNOWLEDGE ORGANISER

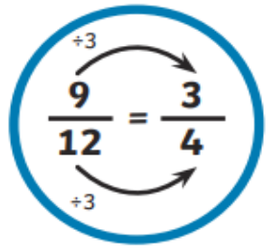
ESSENTIAL VOCABULARY

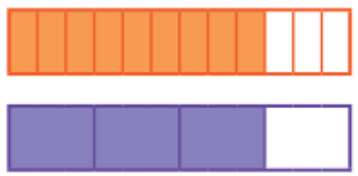
Numerator	We call the top number the Numerator, it is the number of parts we have.
Denominator	We call the bottom number the Denominator, it is the number of parts the whole is divided into.
Proper fraction	A Proper Fraction has a top number less than its bottom number
Improper fraction	An Improper Fraction has a top number larger than (or equal to) the bottom number.
Factor	we use factor to mean a number that can be multiplied or divided to produce a given number
Highest common multiple	The highest number that divides exactly into two or more numbers.
Lowest common multiple	The smallest positive number that is a multiple of two or more numbers.
Equivalents	Equivalent Fractions have the same value, even though they may look different.
Simplify	To simplify a fraction, divide the top and bottom by the highest number that can divide into both numbers exactly
Simplest from	A fraction is in simplest form when the top and bottom cannot be any smaller, while still being whole numbers.
Whole number	Whole Numbers are simply the numbers 0, 1, 2, 3, 4, 5, ... (and so on)
Mixed number	A Mixed Fraction is a whole number and a proper fraction combined
Integers	Integers are like whole numbers, but they also include negative numbers ... but still no fractions allowed!

Simplify Fractions

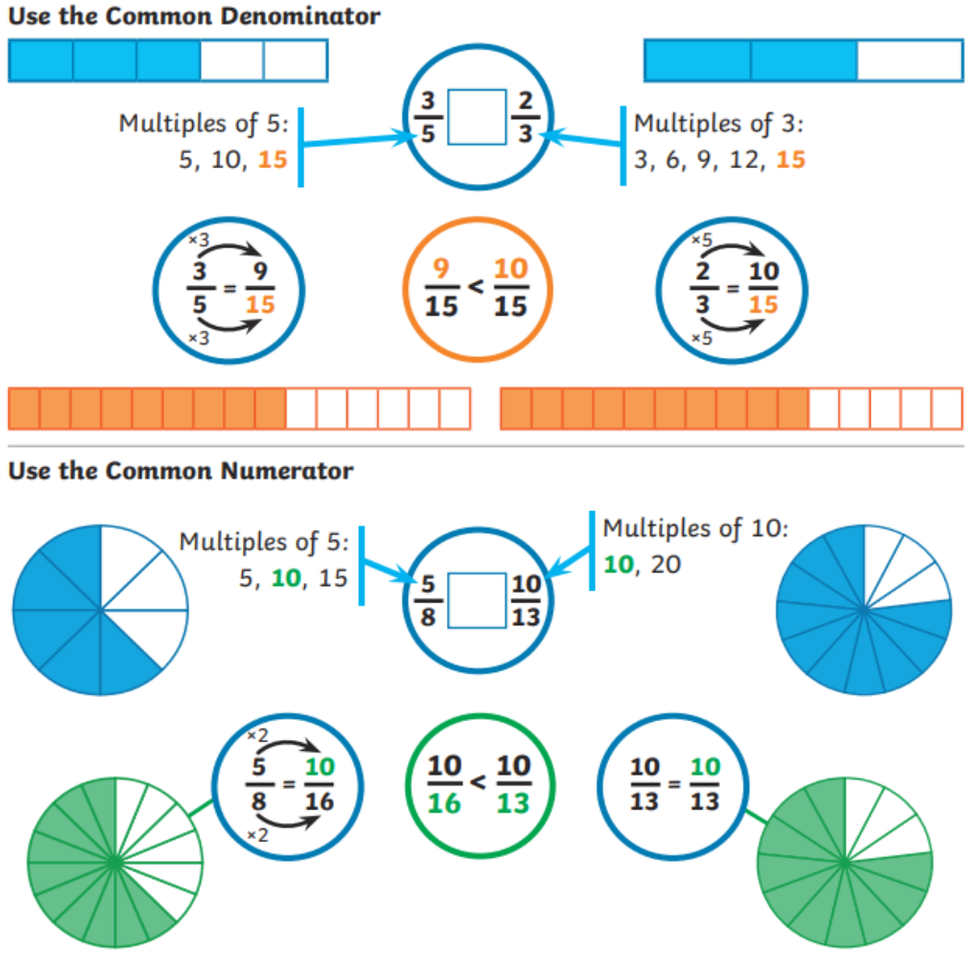
Factors of 9:
1, 3, 9

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





Compare and Order Fractions



LINKS TO PREVIOUS LEARNING

Building from the previous sequence in which pupils applied their knowledge of factors and multiples in a range of contexts, they will now begin to apply this in the context of fractions. Equivalence in fractions has been introduced from Year 2 so pupils will build on their understanding to enable them to identify equivalents.

Stem sentences

We can simplify the fraction by dividing the numerator and denominator by _____.

To multiply a fraction by an integer, we must multiply the numerator by _____.

To multiply a mixed number by an integer, we can convert the mixed number to an _____and then...

To make the equivalent fraction, multiply the numerator by _____.

'As a family we live, love, learn and celebrate with Jesus.'

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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**

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

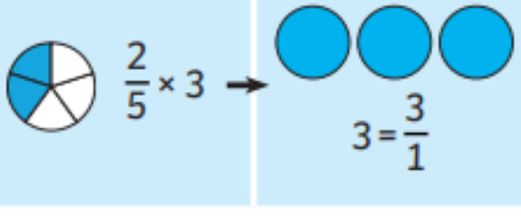
$\frac{18}{20}-\frac{5}{20}=\frac{13}{20}$

Multiplying Proper Fractions

Multiplying Fractions by Fractions

$\frac{1}{2}\times\frac{1}{3}=\frac{1}{2}\times\frac{1}{3}=\frac{1}{6}$

Multiplying Fractions by Whole Numbers



$\frac{2}{5}\times\frac{3}{1}=\frac{6}{5}=1\frac{1}{5}$

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.

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

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

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

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

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

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

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

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

Dividing Fractions by Whole Numbers

$\frac{2}{5}\div 2=\frac{1}{5}$

Multiplication and division are the inverse of one another so:

$\div 2$ is the same as $\times \frac{1}{2}$

$\frac{2}{5}\times\frac{1}{2}=\frac{2}{10}$