YFAR 8 - PROPORTIONAL REASONING

Multiplying and Dividing Fractions

What do I need to be able to do?

By the end of this unit you should be able to:

- Carry out any multiplication or division using fractions and integers.
- Solutions can be modelled, described and reasoned

Keywords

Numerator: the number above the line on a fraction. The top number. Represents how many parts are taken **Denominator**: the number below the line on a fraction. The number represent the total number of parts.

Whole: a positive number including zero without any decimal or fractional parts.

Commutative: an operation is commutative if changing the order does not change the result. Unit Fraction: a fraction where the numerator is one and denominator a positive integer.

Non-unit Fraction: a fraction where the numerator is larger than one.

Dividend: the amount you want to divide up

Divisor: the number that divides another number.

Quotient: the answer after we divide one number by another e.g. dividend+ divisor = quotient

Reciprocal: a pair of numbers that multiply together to give



When adding fractions with

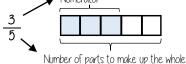
the same denominator = add

the numerators

Representing a fraction

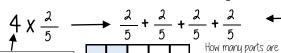
Numerator Denominator

Number of parts represented Numerator

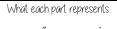


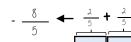
Denominator OLL PORTS of a fraction are of equal size

Repeated addition = multiplication by an integer

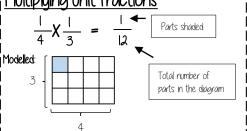


(Whole number) Each part represents 5

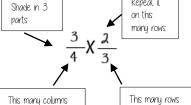




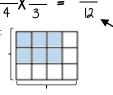
Multipluina unit fractions



Multipluing non-unit fractions



Modelled:



Total number of parts in the diagram

Quick Multiplying and Cancelling down

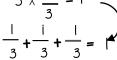


The 3 and the 9 have a common factor and

Quick Solving

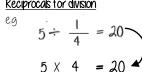
Multiply the numerators Multiply the denominators

The reciprocal When you multiply a number by its reciprocal the answer is always I



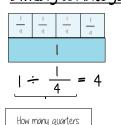
The reciprocal of 3 is

Reciprocals for division



Multiplying by a reciprocal aives the

Dividing an integer by an unit fraction



'There are **4 quarters** in I whole. Therefore, there are 20 quarters in 5 wholes"

Dividing any fractions Remember to use reciprocals



Multiplying by a reciprocal aives the

