

# YEAR 8 - PROPORTIONAL REASONING...

## Multiplying and Dividing Fractions

@whisto\_maths

### 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.

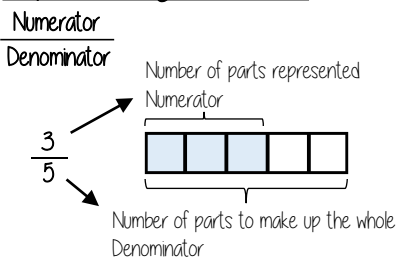
**Divisor:** the number that divides another number.

**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 1

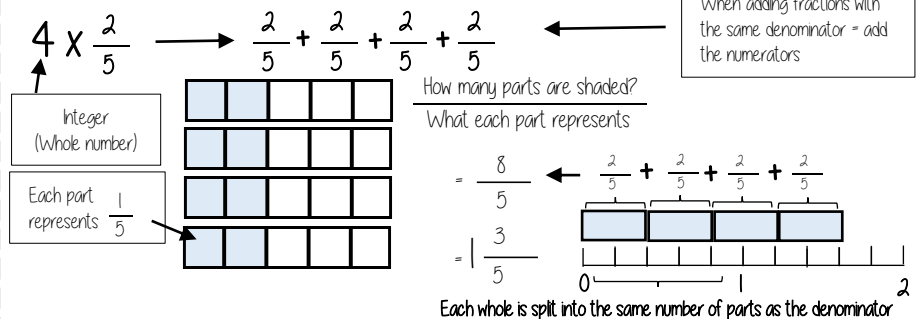


### Representing a fraction



ALL PARTS of a fraction are of equal size

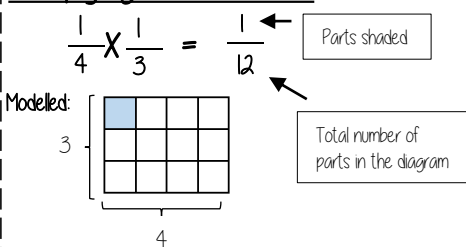
### Repeated addition = multiplication by an integer



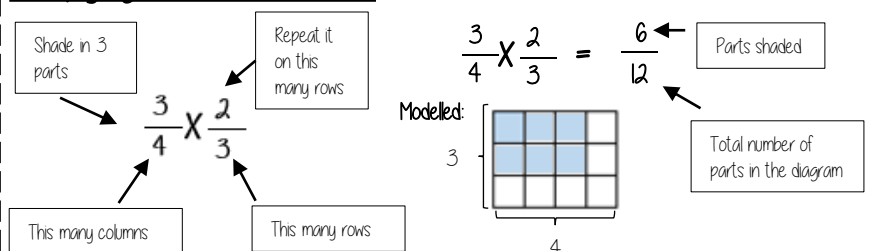
Revisit

When adding fractions with the same denominator = add the numerators

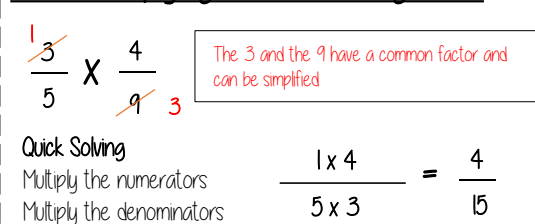
### Multiplying unit fractions



### Multiplying non-unit fractions

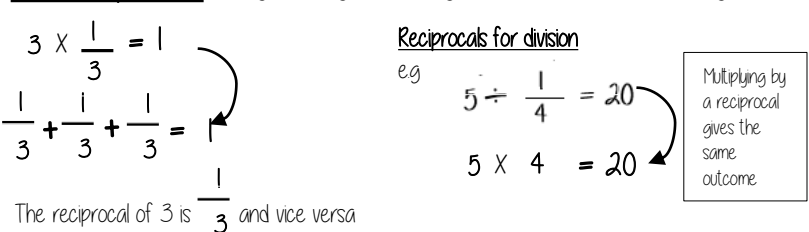


### Quick Multiplying and Cancelling down

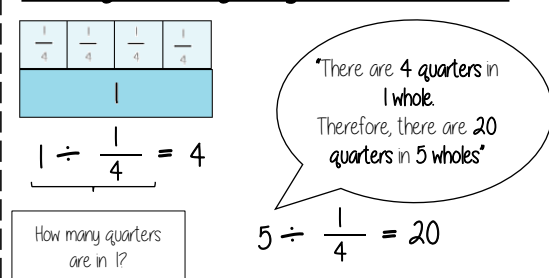


### The reciprocal

When you multiply a number by its reciprocal the answer is always 1



### Dividing an integer by an unit fraction



### Dividing any fractions

Remember to use reciprocals

