

Year 6 Four Operations Knowledge Organiser



Star Vocabulary

Place value	Place value is the value of each digit in a number.
Digits	Any of the numerals from 0 to 9
Value	The worth of something
Integer	A number without a fractional component
Estimate	An approximate calculation or judgement
Remainder	The amount left over after a division.
Factor	Factors are numbers that you multiply together to get another number.
Multiple	The result of multiplying a number by an integer.
Inverse	The opposite in effect.
Prime	Can be divided evenly only by one or itself – must be a whole number.
Cubed	Multiplying a whole number by itself twice.
Squared	Multiply a whole number by itself.

-recall multiplication facts up to 12 x 12
 -manipulate multiplicative equations, including applying the inverse.
 -multiply and divide by 10, 100 and 1000.

-understand that two number can be related additively or multiplicatively.
 -quantify additive and multiplicative relationships
 -derive related calculations

Sentence Stems

It can't be... because...
 I noticed that...
 It must be ... because...
 If...then...
 This is different because...
 This is the same because...
 This is true here because...
 I already know that... so...

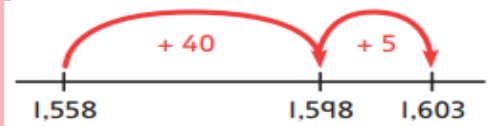
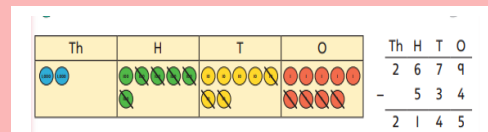
Misconceptions: Why?

Astrid says, 'the order in which I carry out the calculation below does not matter'. Is Astrid correct?



$$3 \times (8-2) = 22$$

Addition and Subtraction



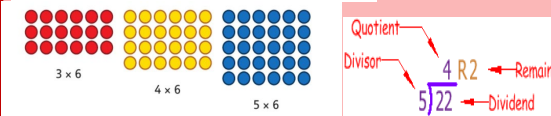
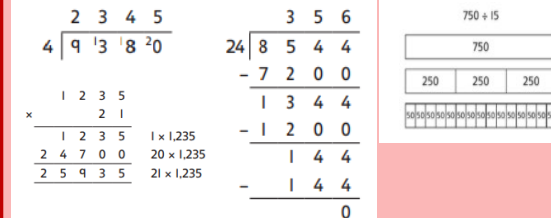
$$8 + 3 = 11$$

Addend Addend Sum

$$8 - 3 = 5$$

Minuend Subtrahend Difference

Multiplication and Division



$$6 \times 3 = 18$$

Factor (or Multiplier) Factor (or Multiplicand) Product

$$22 \div 5 = 4 \text{ R } 2$$

Dividend Divisor Quotient Remainder

Factual & Conceptual Fluency progression

Addition and subtraction within 10.

Secure and maintain fluency in addition and subtraction within and across 10, through continued practice.

Recall the 2, 4 and 8 multiplication tables, and corresponding division facts.

Recall the 7-multiplication table, and corresponding division facts.

Addition and subtraction across 10.

Recall the 10 and 5 multiplication tables, and corresponding division facts.

Recall the 3, 6 and 9 multiplication tables, and corresponding division facts.

Recall the 11 and 12 multiplication tables, and corresponding division facts.

Secure and maintain fluency in all multiplication tables, and corresponding division facts, through continued practice.