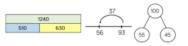
Knowledge Organiser: Year 7 Maths; Generalised Arithmetic (Part 1)



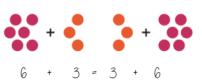




Modelling methods for addition/subtraction

- Bar models
- Number lines
- Part/ Whole diagrams

Addition is commutative



The order of addition does not change the result

Subtraction the order has to stay the same

- Number lines help for addition and subtraction
- Working in 10's first aids mental addition/subtraction
- Show your relationships by writing fact families

Formal written methods

	Н	Т	0
	1	8	7
+	5	4	2

	Н	Т	0
	4	2	7
_	2	4	9

R

Remember the place value of each column. You may need to move 10 ones to the ones column to be able to subtract

Decimals have the same methods remember to alian the place value

Division methods

 $3584 \div 7 = 512$

Short division

Complex division $\div 24 = \div 6 \div 4$

Break up the divisor using factors

Division with decimals

The placeholder in division methods is essential — the decimal lines up on the dividend and the quotient

All give the same solution as represent the same proportion. Multiply the values in proportion until the divisor becomes an integer

! Multiplication methods



Long

multiplication (column)

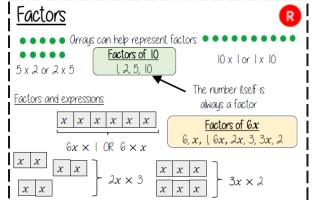
> Less effective method especially for bigger multiplication

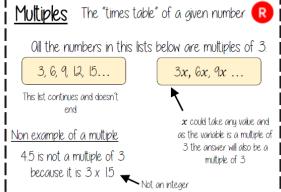
Multiplication with decimals

Perform multiplications as integers eg $0.2 \times 0.3 \longrightarrow 2 \times 3$

Make **adjustments** to your answer to match the question: $0.2 \times 10 = 2$ $0.3 \times 10 = 3$

Therefore $6 \div 100 = 0.06$





<u>Keywords</u>

Subtract: taking away one number from another.

Negative: a value less than zero.

1 8 7

1 8 7

1 8 7

1 8 7

1 8 7

1 8 7

1 8 7 1 8 7

Repeated addition

Commutative: changing the order of the operations does not change the result

Product: multiplu terms I Inverse: the opposite function

Factor: numbers we multiply together to make another number

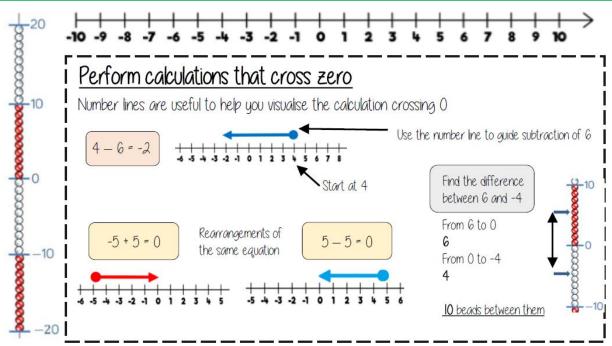
Multiple: the result of multiplying a number by an integer.

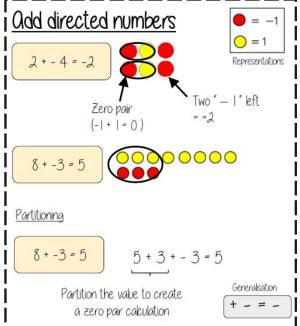
Orrau: an arrangement of items to represent concepts in rows or columns

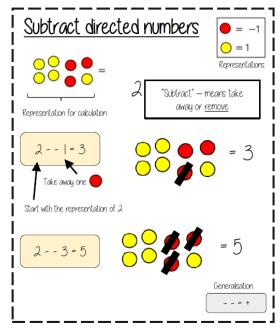
Quotient: the result of a division Dividend: the number being divided Divisor: the number we divide by.

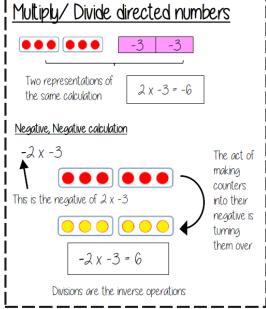
Knowledge Organiser: Year 7 Maths; Generalised Arithmetic (Part 2)

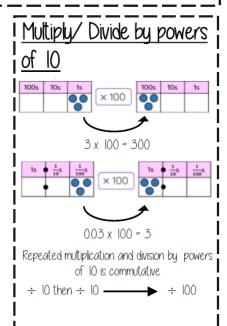














How do we use Knowledge Organisers in Mathematics?

How can you use knowledge organisers at home to help us?

- **Retrieval Practice**: Read over a section of the knowledge organiser, cover it up and then write down everything you can remember. Repeat until you remember everything.
- **Flash Cards:** Using the Knowledge Organisers to help on one side of a piece of paper write a question, on the other side write an answer. Ask someone to test you by asking a question and seeing if you know the answer.
- **Mind Maps:** Turn the information from the knowledge organiser into a mind map. Then reread the mind map and on a piece of paper half the size try and recreate the key phrases of the mind map from memory.
- **Sketch it:** Draw an image to represent each fact; this can be done in isolation or as part of the mind map/flash card.
- **Teach it**: Teach someone the information on your knowledge organiser, let them ask you questions and see if you know the answers.

How will we use knowledge organisers in Mathematics?

Knowledge organisers will be used before I complete a Learning Check or Common Assessment. I will spend part of the lesson looking over each of the key topics of the half term before completing the Learning Check or Common Assessment.

I will also use these at home to complete my own independent learning and revision of these key topics.