My mathematical journey

What do I need to remember from before?

Multiplication and division (NP3)

Multiplying by composing and decomposing (NP3)

Multiples and factors (NP3)

What will I learn about in this unit?

Repeated multiplication

Powers and roots

Prime numbers

Composing and decomposing primes

Where does this lead?

Order of operations (NP5)

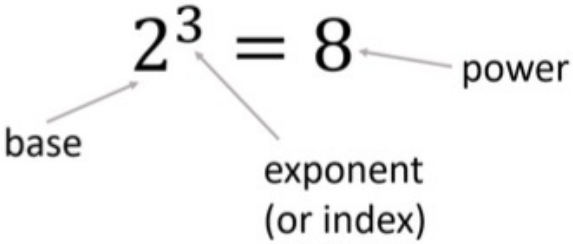
Directed numbers (NP6)

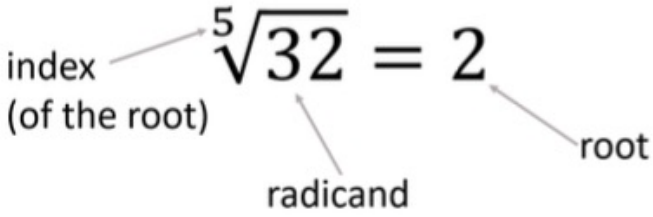
Quadratics (A11)

Index laws (NP15)

Exponential growth (NP16)

Key words and symbols: what I need to say and write accurately





The "radical" or "root" symbol: $\sqrt{\square}$

Fingertip facts: what I need to learn by heart

The first fifteen square numbers:

Square number	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th	13th	14th	15th
Value	1	4	9	16	25	36	49	64	81	100	121	144	169	196	225

The first ten cube numbers:

Cube number	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
Value	1	8	27	64	125	216	343	512	729	1000

The prime numbers less than 100:

2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47, 53, 59, 61, 67, 71, 73, 79, 83, 89, 97

My mathematical journey

What do I need to remember from before?

Addition and subtraction (NP2)

Multiplication and division (NP3)

Exponents and roots (NP4)

What will I learn about in this unit?

Flexible calculating

The order of operations

Using visible and invisible brackets to break the order of operations

Where does this lead?

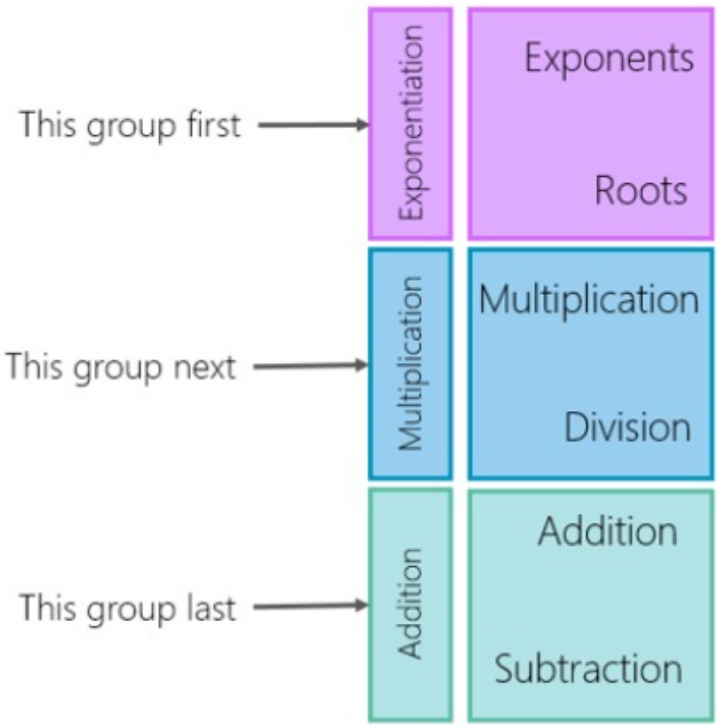
Directed numbers (NP6)

Substitution (A1, A2, A5)

Linear equations (A4)

Fingertip facts: what I need to learn by heart

The order of operations is:



To break the order, use brackets.

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My mathematical journey

What do I need to remember from before?

Addition and subtraction with integers and decimals (NP2)

Multiplication and division with integers and decimals (NP3)

Exponents and roots (NP4)

Order of operations (NP5)

What will I learn about in this unit?

Direction of numbers

Using negative numbers

Calculating with negative numbers

Where does this lead?

Algebraic expressions (A2, A3)

Linear equations (A4)

Formulae (A5)

Graphs (A6)

Quadratic expressions (A11)

Key words and symbols: what I need to say and write accurately

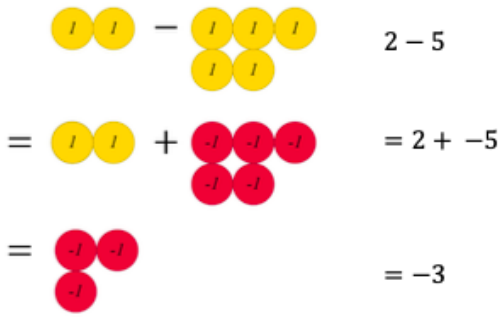
Number	What we write	What we say
6	6, +6, $^{+}6$	"six" "positive six"
–6	–6, $^{-}6$, (–6)	"negative six"

The sign of a number refers to whether it is positive or negative.

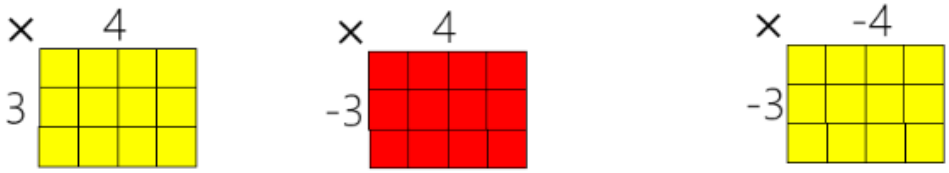
Fingertip facts: what I need to learn by heart

A zero pair is a pair of positive and negative numbers of the same magnitude. Their sum is 0.

Subtraction is the same as adding the inverse. When you subtract, invert the number (flip the tile) and add.



Whenever we multiply or divide by a negative number, we invert the sign (flip the tiles).



My mathematical journey

What do I need to remember from before?

Addition and subtraction (NP2)

Multiplication and division (NP3)

Exponents and roots (NP4)

Order of operations (NP5)

Directed numbers (NP6)

What will I learn about in this unit?

Representing fractions with pictures and numerals

Calculating with fractions

Finding fractions and wholes

Where does this lead?

Percentages, decimals and fractions (NP8)

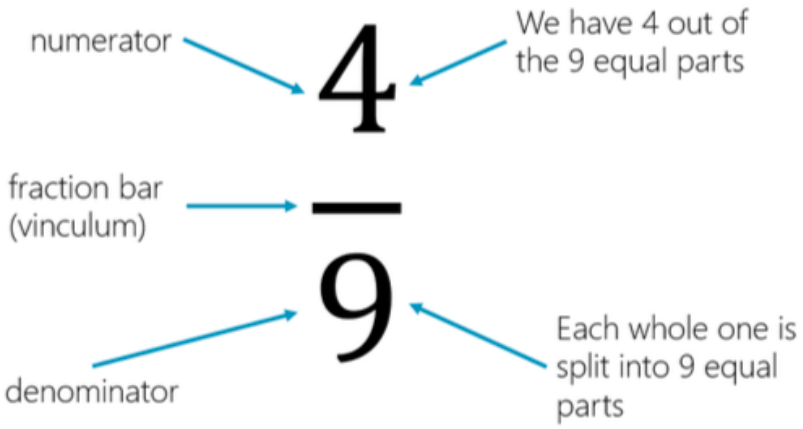
Proportional reasoning (NP10)

Ratio (NP11)

Linear equations (A4)

Algebraic fractions (A17)

Key words and symbols: what I need to say and write accurately



Word	Explanation
proper fraction	a number less than 1, written as a fraction where the numerator is less than the denominator. e.g. $\frac{4}{9}$
improper fraction	a number greater than 1, written as a fraction where the numerator is greater than the denominator. e.g. $\frac{14}{9}$
mixed number	a number greater than 1, written as an integer and a proper fraction. e.g. $1\frac{5}{9}$