Mathematical vocabulary

Illustrated maths dictionary - https://www.mathsisfun.com/definitions/index.html
NCETM – Mastery Professional Development (Contains teaching guidance and resources)
https://www.ncetm.org.uk/resources/50640

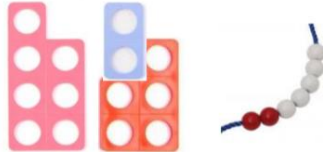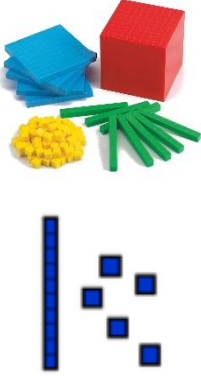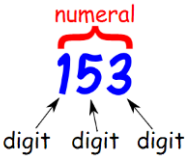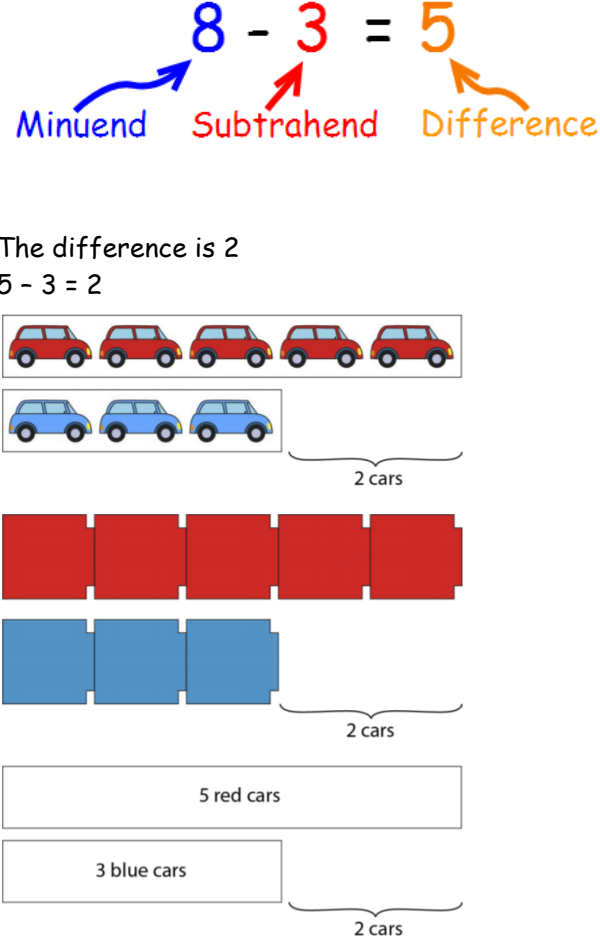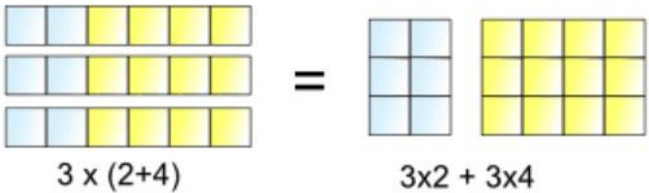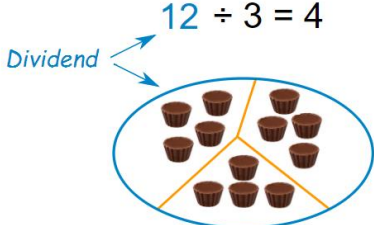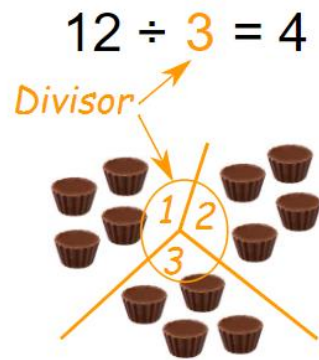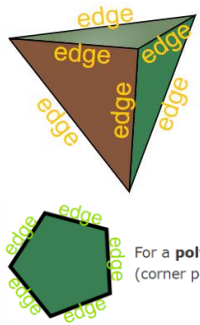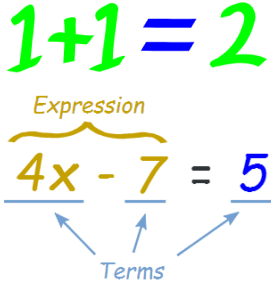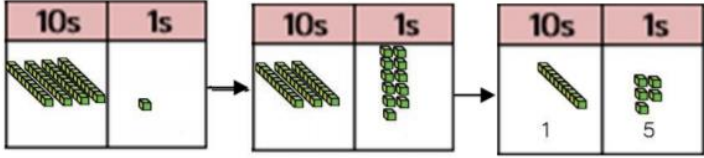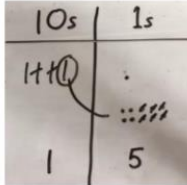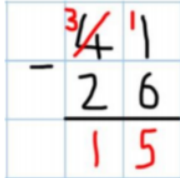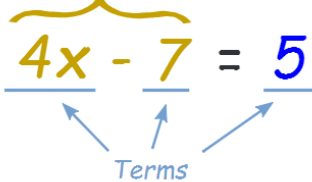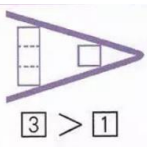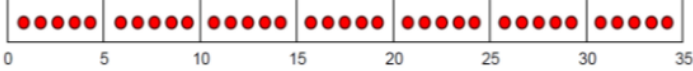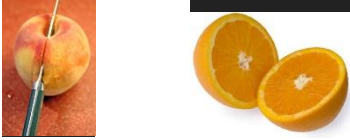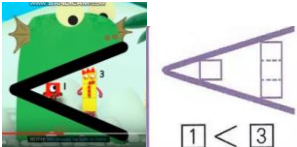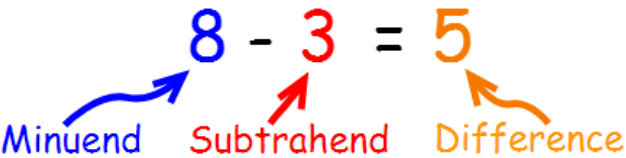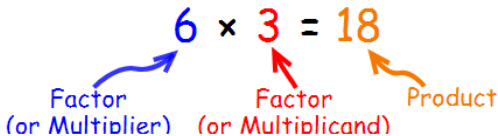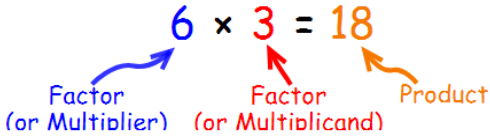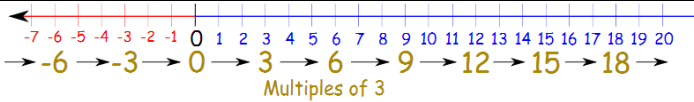|	Definition	Example
1:1 correspondence	The act of counting each object in a set once, and only once with one touch per object.	Point to each object as they count. The children might rearrange the objects they are counting to help with 1:1 correspondence. Count 5 → Rearrange to dice pattern
Addend	Any of the numbers that are being added together	$8 + 3 = 11$ Addend Addend Sum or Total
Aggregation	Combining two or more parts to make a whole	4 + 5 How many umbrellas in total?
Array	Items (such as objects, numbers, etc.) arranged in rows and/or columns.	2 rows of 5 $2 \times 5 = 10$ 5 columns of 2 $5 \times 2 = 10$
Ascending order	Arranged from smallest to largest. Increasing.	3, 9, 12, 55 are in ascending order
Associative Law	When **adding** it doesn't matter how we group the numbers (i.e. which we calculate first). Also when **multiplying** it doesn't matter how we group the numbers.	Example addition: $(6 + 3) + 4 = 6 + (3 + 4)$ Because $9 + 4 = 6 + 7 = 13$ $(6 + 3) + 4 = 6 + (3 + 4)$ Example multiplication: $(2 \times 4) \times 3 = 2 \times (4 \times 3)$ Because $8 \times 3 = 2 \times 12 = 24$ $(2 \times 4) \times 3 = 2 \times (4 \times 3)$
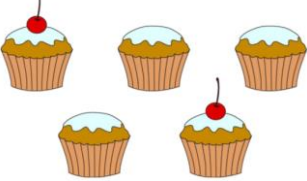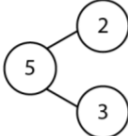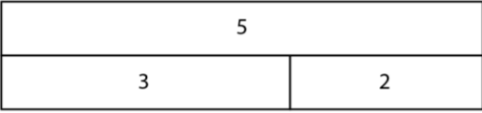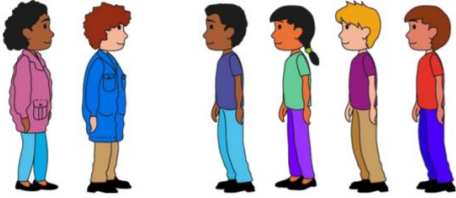
Augend	The number you are adding to	Augend is zero: 'First, there were no people in the car. Then, two people got into the car. Now, there are two people in the car.' First Then Now 0 + 2 2 $0 + 2 = 2$ augend + addend = sum $57 + 34 = 91$ operation
Augmentation	Addition Add to an amount	'First, four children were sitting on the bus. Then, three more children got on the bus. Now, seven children are sitting on the bus.' First Then Now 4 + 3 7 $4 + 3 = 7$ 4 is the augend 3 is the addend 7 is the sum or total
Cardinal number	Cardinal numbers (or cardinals) say **how many** of something there are, such as one, two, three, four, five. They answer the question "How Many?"	There are five coins in this picture.
Commutative law	The Law that says you can swap numbers around and still get the same answer when you add. Or when you multiply.	$6 + 3$ = $3 + 6$ 6 + 3 is equal to 3 + 6 $2 × 4$ = $4 × 2$ 2 x 4 is equal to 4 x 2
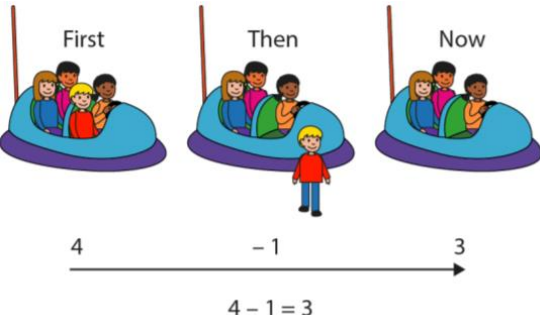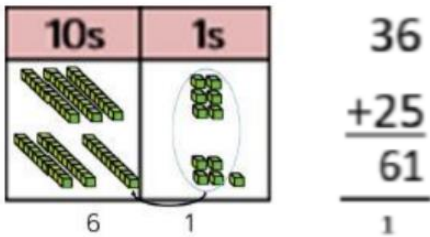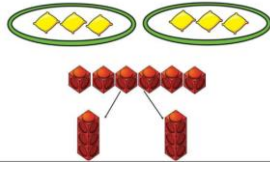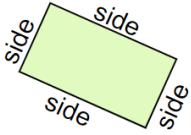
Composition	How numbers can be made	7 is made up of 5 and 2
Descending order	Arranged from largest to smallest. Decreasing.	100, 45, 22, 18, 2 are in descending order.
Dienes	Wooden or plastic cubes, rods and flats used to support children in learning place value. Each small cube represents a one, a rod represents 10, a flat represents 100 and a large cube represents 1000.	1 ten and 5 ones = 10 + 5 = 15
Digit	A single symbol used to make a numeral. **0**, **1**, **2**, **3**, **4**, **5**, **6**, **7**, **8** and **9** are the ten digits we use in our daily lives.	numeral 153 digit digit digit The numeral 153 is made up of the digits "1", "5" and "3". The numeral 9 is made up of only one digit "9".
Difference	The result of subtracting one number from another. How much one number differs from another. Difference compares the number of objects in one set with the number of objects in another set; or the difference between two measures.	8 - 3 = 5 Minuend Subtrahend Difference The difference is 2 5 – 3 = 2 2 cars 2 cars 5 red cars 3 blue cars 2 cars
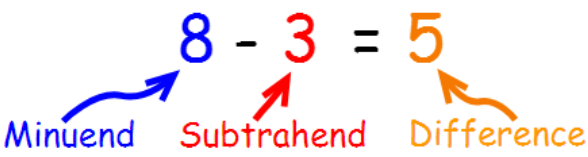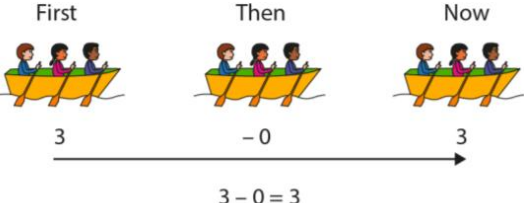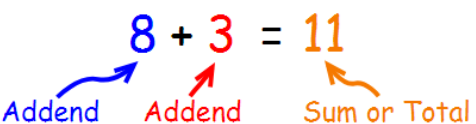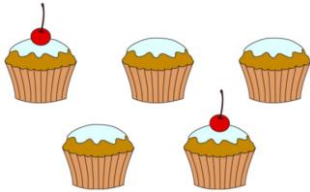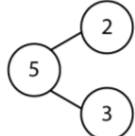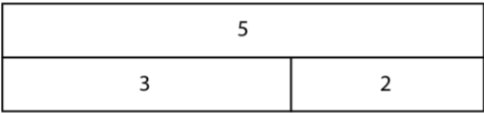
Distributive law	The Distributive Law says that **multiplying a number by a group of numbers added together** is the same as doing each multiplication separately.	$3 \times (2 + 4) = 3{\times}2 + 3{\times}4$ So the "3" can be "distributed" across the "2+4" into 3 times 2 and 3 times 4. 3 x (2+4) 3x2 + 3x4
Dividend	The amount that you want to divide up. dividend ÷ divisor = quotient	 $12 \div 3 = 4$ Dividend
Divisor	The number we divide by. dividend ÷ divisor = quotient Divisor can also mean: a number that divides an integer exactly (no remainder). e.g. 3 is a divisor of 12, because 12 ÷ 3 = 4 exactly But 5 is NOT a divisor of 12, because 12 ÷ 5 = 2 with a remainder of 2	 $12 \div 3 = 4$ Divisor
Edge	An edge is a line segment where **two faces meet**. Faces meet to create **edges** and edges meet to create **vertices**. Therefore, a cone has an **apex** and not a **vertex**. A face and a curved surface meeting is a curved edge.	 For a **polygon** an edge is a line segment **on the boundary** joining one vertex (corner point) to another. This Pentagon Has 5 Edges
Equation	An equation says that two things are equal. It will have an equals sign "=" like this: An equation is like a statement "this equals that"	$7 + 2 = 10 - 1$ What is on the left (7 + 2) is equal to what is on the right (10 – 1) $1+1 = 2$ Expression $4x - 7 = 5$ Terms
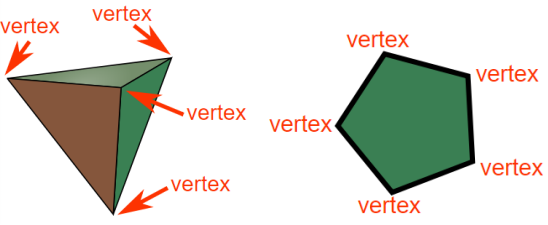
Exchanging	Swapping a ten for 10 ones when subtracting if there isn't enough. Swapping a hundred for 10 tens etc.	41 – 26 =15 Can't do 1 one subtract 6 ones, so exchange 1 ten to 10 ones which now makes 11 ones in total, and leaves 3 tens. Now you can subtract 6 ones from 11 ones, which leaves 5 ones. 3 tens subtract 2 tens leaves 1 ten.
Expression	Numbers, symbols and operators (such as + and ×) grouped together that show the value of something.	
Face	A face is any of the individual flat surfaces of a solid object. Faces meet to create **edges** and edges meet to create **vertices**. Therefore, a cone has an **apex** and not a **vertex**. A face and a curved surface meeting is a curved edge.	
Factors	Numbers we can multiply together to get another number. A number can have MANY factors!	 What are the factors of 12? 3 × 4 = 12, so 3 and 4 are factors of 12 Also 2 × 6 = 12 so 2 and 6 are also factors of 12 And 1 × 12 = 12 so 1 and 12 are factors of 12 as well So 1, 2, 3, 4, 6 and 12 are all factors of 12 And -1, -2, -3, -4, -6 and -12 also, because multiplying negatives makes a positive.
Greater than	The symbol > means greater than.	4 > 2 4 is greater than 2

Grouping	Divide quantities into equal groups	10 ÷ 2 = 5 How many groups of 2 are there in 10? 35 ÷ 5 = 7 How many lots of 5 go into 35? How many 5s in 35?
Half	One of two equal parts	 My friend and I share a pizza equally: we get half each.
Halve	To divide something into 2 equal parts Halves – plural of half	
Less than	The symbol ‹ means less than.	1 ‹ 3 1 is less than 3
Minuend	The first number in a subtraction. The number from which another number (the subtrahend) is to be subtracted. **minuend – subtrahend = difference**	 Minuend Subtrahend Difference
Multiplicand	The number that gets multiplied. But because we can multiply the two numbers in any order, it is better to use the word "factor".	6 × 3 = 18 Factor (or Multiplier) Factor (or Multiplicand) Product
Multiplier	The number that you are multiplying by. But because we can multiply the two numbers in any order, it is better to use the word "factor".	6 × 3 = 18 Factor (or Multiplier) Factor (or Multiplicand) Product
Multiples	The result of multiplying a number by an integer (not by a fraction).	 Multiples of 3 Examples: • 12 is a multiple of 3, because 3 × 4 = 12 • −6 is a multiple of 3, because 3 × −2 = −6 • But 7 is NOT a multiple of 3

Number	A number is a count or measurement.	They are really an idea in our minds. We write or talk about numbers using numerals such as "5" or "five". We could also hold up 5 fingers, or tap the table 5 times. These are all different ways of referring to the same number. There are also different *types of numbers*, such as • whole numbers {1,2,3,...} • decimals (like 1.48 or 50.5) • fractions (like 1/2 or 3/8) • and more.
Numeral	A symbol or name that stands for a number.	numeral 153 digit digit digit 3, 49 and twelve are all numerals
Part	A section of the object or a section of the group of discrete objects. The parts do not need to be equal.	2 is a part 3 is a part Part-part-whole: 5, 2, 3 Bar model: 5 / 3 / 2
Partitioning	Breaking a whole down into two or more parts The subtraction symbol can be used to represent partitioning	24 20 4 'There are six children. Two of them have put their coats on. How many have not put their coats on?' 6 – 2 = 4
Product	The answer when two or more numbers are multiplied together.	6 × 3 = 18 Factor (or Multiplier) Factor (or Multiplicand) Product

Reduction	Subtraction	*First*, there were four children in the car. **Then**, one child got out. **Now**, there are three children in the car.' $4 - 1 = 3$
Regrouping	Changing groups of one into tens to make adding easier. Then changing groups of tens into hundreds etc. Regroup when it totals to more than 10.	36 + 25 = 61
Sharing	Splitting into equal parts or groups.	6 ÷ 2 Share 6 objects between 2 The objects have been shared into 2 groups. The chocolates have been shared into 3 groups.
Side	One of the line segments that make a flat (2-dimensional) shape.	Rectangles have 4 sides.
Subitising	Instantly recognizing the number of objects in a small group, without counting.	When you know there are 5 coins here without counting.

Subtrahend	The number that is to be subtracted. The second number in a subtraction. minuend – subtrahend = difference	$8 - 3 = 5$ Minuend — Subtrahend — Difference Subtrahend is zero: '**First**, there were three children in the boat. **Then**, no children got out of the boat. **Now**, there are three children in the boat.' First — Then — Now 3 — − 0 — 3 $3 - 0 = 3$
Sum	The result of adding two or more numbers.	$8 + 3 = 11$ Addend — Addend — Sum or Total
Surface	A curved face.	A sphere has a **curved surface**. A cone has one face, one curved surface, one circular edge and an apex.
Whole	A whole can be represented by one object; if some of the whole object is missing, it is not the 'whole'. A whole object can be split into two or more parts in many different ways. The parts don't have to be equal. A whole can be represented by a group of discrete objects. If some of the objects in the group are missing, it is not the whole group – it is part of the whole group. A whole group of objects can be composed of two more parts and this can be represented using a part-part-whole diagram.	The whole is 5. Part-part-whole: 2 5 3 Bar model: | 5	
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3	2	
Vertices	Plural of vertex.	

Vertex	A vertex is a corner. A **vertex** (plural: **vertices**) is a point where two or more line segments meet. For 2D shapes they are corners, but can also be referred to as vertices. Faces meet to create **edges** and edges meet to create **vertices**. Therefore, a cone has an **apex** and not a **vertex**. A face and a curved surface meeting is a curved edge.	vertex vertex vertex vertex vertex vertex vertex vertex vertex This triangular based pyramind has 3 vertices. This pentagon has 5 vertices.

Words not to use:

- Borrow
- Carry
- Sum (for number sentence/equation)
- Unit/s (e.g. 15 has 5 ones, **not** 5 units)