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ONLINE WORKSHOPS

Making Basic Math Vocabulary Clear

Unclear mathematical language creates an obstacle to learning for children and adults.

Here are a few terms that I've found cause "math confusion".

Number vs. Quantity

A number is an arithmetical value, expressed by a word, symbol, or figure, representing a particular quantity and used in counting and making calculations and for showing order in a series or for identification

A quantity is a value or component that may be expressed with a number; or, the figure or symbol representing this.

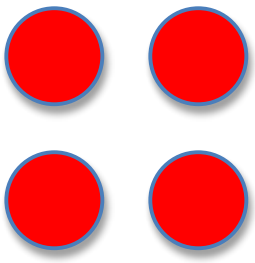
Math confusion begins when we try to differentiate between the concrete ability to count four objects and then to abstractly represent that amount with a symbol, 4, or with a word, four.

Concretely, we can see and count the quantity to figure out how much we have.

Abstractly, we express how much we have by using a number, as a symbol or word.

Many people use both terms, number and quantity, to express the concrete and abstract, leading to math confusion.

Quantity (Concrete)



Number (Abstraction)

4

Units vs. Ones

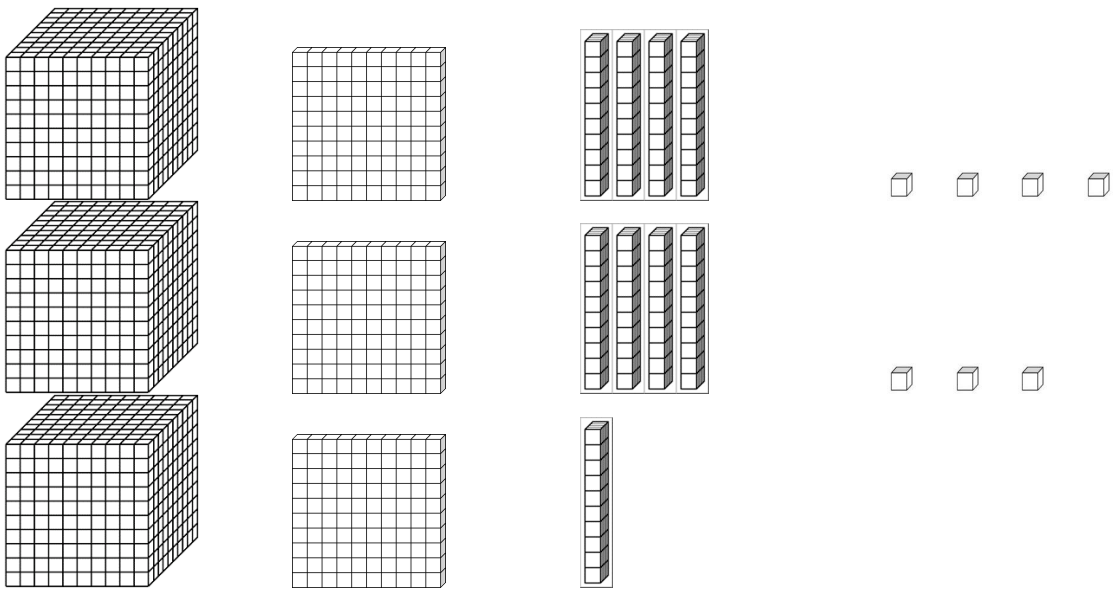
Every number system is defined by its base and unit.

For example in our base ten system, after counting ten units we create a new quantity grouping called tens. Tens are made up of ten units. Each time we have ten in one group we create a new quantity group. Ten tens make a hundred. Ten hundreds make a thousand. Ten thousands make a ten thousand grouping. And on and on.

It is from these quantity groupings that we give a value to each symbol in a number. This is also referred to as place value.

For example: 3,397
Three thousand, three hundred, ninety-seven.

Three in the thousands place.
Three in the hundreds place.
Nine in the tens place.
Seven in the units place.



When we call the “units place” the “ones place” it blurs the meaning.

Teachers ask, “How many do you have in the ones place?”

The student looks for the symbol “1” in the number and it is not there.

When the student concretely counts the amount, he finds that there are 3,397 units, in four different quantity groupings. Confusion gone.

Digits vs. Numerals vs. Numbers

Digits refer to the numerals from 0 to 9, especially when forming part of a number.

Digits are also fingers (including the thumb) or toes.

We say the number 3,397 has four digits.

Some people say we have ten numerals, 0,1,2,3,4,5,6,7,8,9.

Others refer to these ten numerals as digits, or as numbers.

Others say that numbers are written using numerals or digits, in the same way that words are written with letters.

Or they refer to dividing a number to ten digits.

Sorry folks. This adds to the confusion.

Use Clear Terminology

In written language we make a clear distinction between letters, words, and the objects the words represent.

Unfortunately in math the words for numerals (number symbols), numbers, and the quantities the numbers represent can be used interchangeably.

We offer a big help to our children when we use clear terms to define and understand numerals, numbers and quantity.

May I suggest the following:

Quantity: The amount of objects in a set.
Numerals or number symbols: Symbols to represent the quantities 0,1,2,3,4,5,6,7,8,9.
Numbers: The symbolic representation of quantities to infinity using numerals, and using the unit as the basis, or base, of the numbering system.

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Teaching Number Sense

Do you want to help kids love math?
Would you like to make working with numbers fun?

Join me for a LIVE Webinar on Tuesday, April 28, from 4:00 pm to 5:30 pm PDT.

In *Teaching Number Sense* you'll get practical common sense advice about how to help children love learning their math facts...and it's not drill and kill methods.

It's about skills and thrills to fuel enthusiasm.

Mathematics is the language we use to talk about quantity, structure, space and change, as well as other qualities of the physical world. Our experiences within our physical world determine how we learn to think and communicate this knowledge.

In this LIVE webinar, I'll show you how to give children foundational experiences with quantity, structure, space and change, experiences that will develop their number sense and love of using the language of mathematics.

This workshop is based on current research along with my twenty plus years of experience teaching children ages 3 to 15.

You'll find information in this LIVE webinar that might turn the children around you into math lovers!

Visit http://MarenSchmidt.com/workshops/teaching-number-sense/