



# Knowledge Organiser Focus:

## Making generalisations about the number system

**I should already know:**

The units of time  
 How to perform the basic operations

**I will learn:**

How to work with time

How a base 10 number system works

How to complete different calculations efficiently

The different structures of numbers and how they can be used

The relationship between different operations

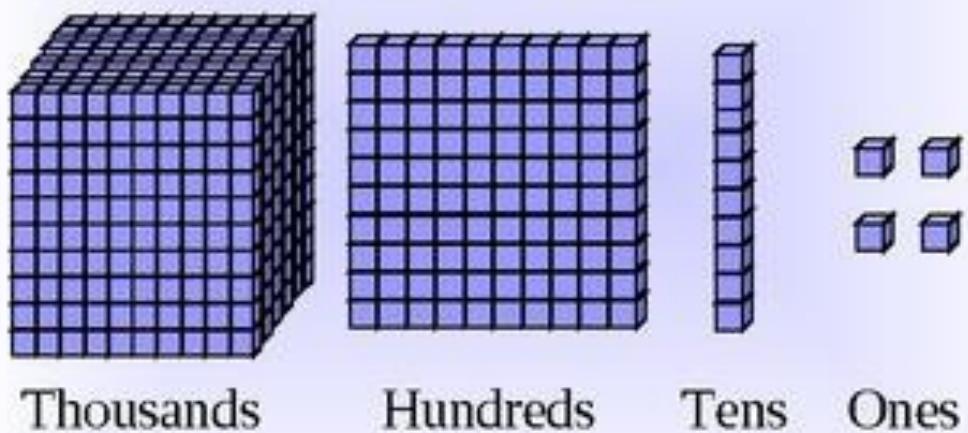
**This will help in the future:**

We will build an understanding of how numbers interact and learn to work efficiently and accurately with numbers

**Key Words**

<b>Operation</b>	A basic calculation (add, subtract, multiply, divide)
<b>Factor</b>	A factor of a number is an integer that divides the number exactly leaving no remainder
<b>Multiple</b>	Multiples of a number are found in the number's times-table
<b>Prime</b>	prime number has 2 factors, itself and 1
<b>Vinculum</b>	The line separating the numbers in a fraction

These blocks can help you understand and count numbers.



**Greater Depth Challenge**

Can you find out how to count using a binary number system?

**Further Reading**  
 Hegarty Maths



# Knowledge Organiser Focus:

## Making generalisations about the number system

Unit 1 – numbers and numerals		
No.	Question	Answer
1.1	What is analogue display?	Like a clock face
1.2	What is digital display?	Using digits
1.3	How many digits do 24 hour clocks always have?	2
1.4	What does am mean?	Morning
1.5	What does pm mean?	Afternoon
1.6	With which clock do you use am and pm?	12 hour clock
1.7	How many seconds in a minute?	60
1.8	How many minutes in an hour?	60
1.9	How many hours in a day?	24
1.10	Write the following in order from biggest to smallest? Minutes, days, seconds, hours	Days, hours, minutes, seconds
1.11	What does > mean?	Greater than e.g. $3 > 2$
1.12	What does < mean?	Smaller than e.g. $2 < 3$
1.13	What does = mean?	Equal to
1.14	What is place value?	The value of where the digit is in the number
1.15	How do you write one?	1
1.16	How do you write ten?	10
1.17	How do you write one hundred?	100
1.18	How do you write one thousand?	1000
1.19	How do you write ten thousand?	10,000
1.20	How do you write one hundred thousand?	100,000
1.21	How do you write one million?	1,000,000

Unit 2 – axioms and arrays		
No.	Question	Answer
2.1	What is multiplication?	Equal groups, parts of measures
2.2	What is division?	Splitting into equal parts
2.3	What is commutativity?	The operation can be applied to two numbers in any order
2.4	What two operations are commutative?	Multiplication and addition
2.5	What is associativity?	Grouping numbers to make the calculation easier
2.6	What is distributivity?	Multiplying a number by a group of numbers added together
2.7	What is a conjecture?	An educated guess

Unit 3 – factors and multiples		
No.	Question	Answer
3.1	What is a factor?	A factor of a number divides that number exactly leaving no remainder
3.2	What is a prime number?	A prime number has 2 factors, itself and 1
3.3	What is an abundant number?	The sum of an abundant number's factors is larger than itself
3.4	What is a square number	A square number is the result of multiplying an integer by itself
3.5	What is a multiple?	Multiples of a number are found in the number's times-table
3.6	What is co-prime?	Two numbers are co-prime if they have no common factors others than 1
3.7	What is a counter example?	An example which contradicts the original statement
3.8	What are twin primes?	We call two numbers twin primes if they are prime numbers which have a difference of 2
3.9	Perfect number	A perfect number can be written as the sum as all of its factor

Unit 4 – order of operations		
No.	Question	Answer
4.1	Which operation has equal priority with addition?	Subtraction
4.2	Which operation has equal addition with multiplication?	Division
4.3	What do brackets mean?	Do this part first!
4.4	How do you find the area of a rectangle?	Base x perpendicular height
4.5	What does the vinculum mean?	Divide the numerator by the denominator
4.6	What is a variable?	A letter which represents an unknown number



# Knowledge Organiser Focus:

## Test yourself: Making generalisations about the number system

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3.9	Perfect number	

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