

The Magic of Numbers

Rjurik Davidson

Series Editor Rob Waring

Seed
Learning



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Why Have Numbers?

Today, we find numbers everywhere. We use them not only to count, but to make cars and computers, too.

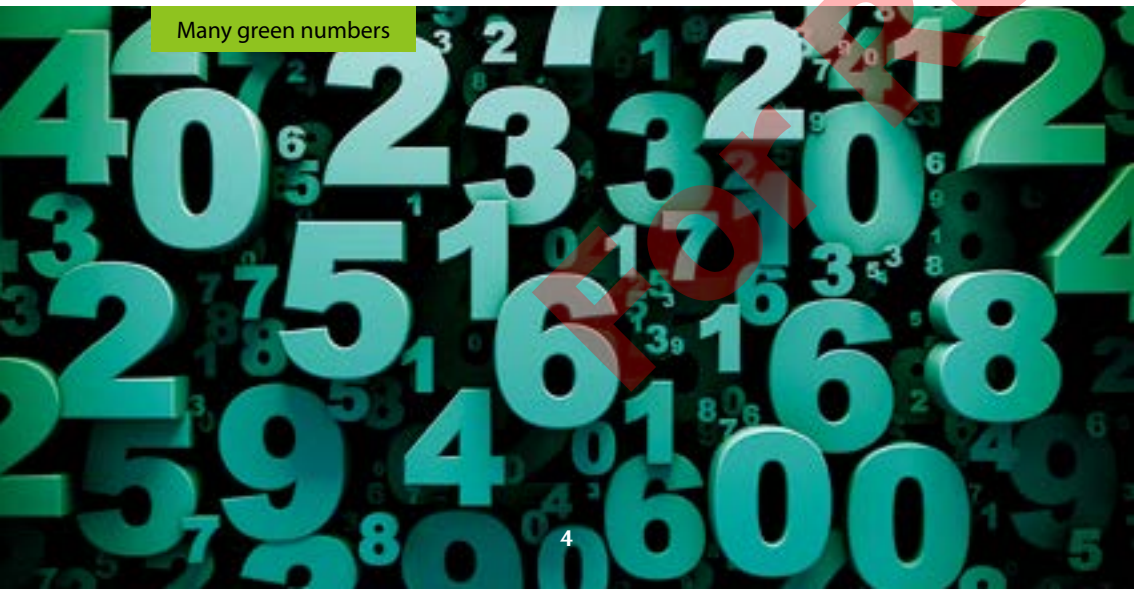
We first notice numbers when we are about one year old.

We know if we have only 2 of our 4 toys to play with!



Children showing the numbers 1 to 9

Many green numbers



Using Your Fingers

But how did people discover numbers?

From the beginning, people probably used their fingers to show numbers. But there are only five fingers on each hand. What happens if you want to say that you are eleven years old?



A hand showing the number three

What happens when you get to eleven?



We only have 20 fingers and toes.



Who Discovered the First Numbers?

People needed to write numbers down so they could remember them.

The Ishango bone was found in Africa and is around 22,000 years old. It has groups of marks on it. Each group has the same number of marks. So the people who made the bone were counting in units.



The Ishango Bone



The Ishango Bone was found in the Democratic Republic of Congo.

People in Sumeria and Egypt needed to know how many farm animals they had. They also needed to remember how much money others borrowed from them.

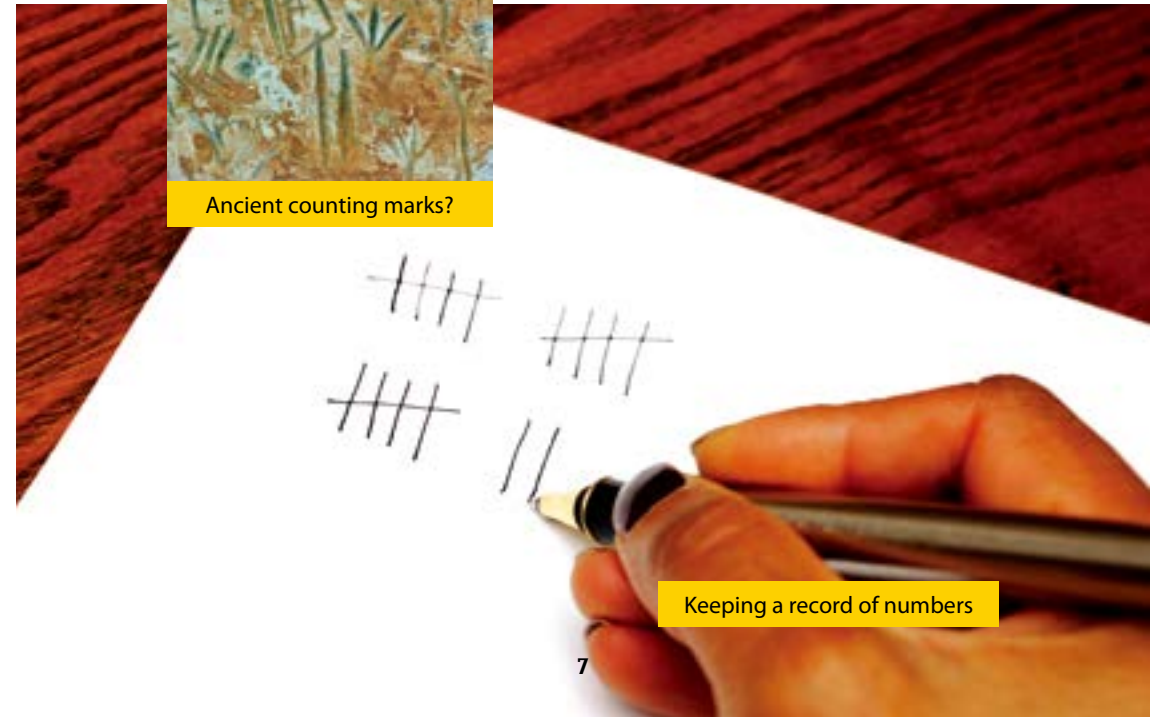


Animals to count

The easiest way to write the number one is probably to draw something like a finger. This is what the Egyptians did.



Ancient counting marks?



Keeping a record of numbers



An Egyptian temple

Roman Numbers

The Romans changed the Egyptian system. When they got to five, instead of writing it with five marks, they wrote it like this – “V.”

Can you guess why? The Romans did not want to use too many marks.

Roman	Arabic	Latin	Greek	Hebrew	Chinese	Japanese	Thai
I	1	A	Α	א	一	一	๑
II	2	B	Β	ב	二	二	๒
III	3	C	Γ	ג	三	三	๓
IV	4	D	Δ	ד	四	四	๔
V	5	E	Ε	ה	五	五	๕
VI	6	F	Ϝ	ו	六	六	๖
VII	7	G	Ζ	ז	七	七	๗
VIII	8	H	Η	ח	八	八	๘
IX	9	I	Θ	ט	九	九	๙
X	10	K	Ι	י	十	十	๑๐
XX	20	L	Κ	כ	二十	二十	๒๐
XXX	30	P	Ξ	ל	三十	三十	๓๐

Comparing the Roman and Egyptian systems



Egyptian numbers on a wall

The Egyptian number one is represented by “I.” Their number two is represented by “II.”

When they got to five, they wrote three marks and then two marks under them, so it was easy to read. Their ten looked a bit like an “n.”

Egyptian
hieroglyphs with
numerals



Roman coins



Ancient Rome

Comprehension Questions

1. Before numbers were invented, people probably counted by...
 - (a) using words.
 - (b) using stones.
 - (c) using their fingers.
 - (d) using a bone.
2. Why is the Ishango bone important?
 - (a) It is from India.
 - (b) It is the first object to show counting.
 - (c) It is better than a calculator.
 - (d) All of the above.
3. How did the Egyptians write the number ten?
 - (a) With ten marks
 - (b) By writing out "10"
 - (c) They didn't have a symbol for it.
 - (d) By using a symbol that looks a bit like an "n"
4. The Romans used the symbol "V" for the number 5 because...
 - (a) it had fewer marks.
 - (b) it had more marks.
 - (c) it was a traditional symbol.
 - (d) it was easier to remember.
5. What number system replaced Roman numerals in Europe?
 - (a) Asian numerals
 - (b) Binary numerals
 - (c) Indian numerals
 - (d) American numerals
6. Which number system do we use today?
 - (a) The Egyptian system
 - (b) The Indian system
 - (c) The Roman system
 - (d) The Sumerian system
7. Who probably discovered the symbol for zero?
 - (a) A German
 - (b) A Roman
 - (c) An Indian
 - (d) A Sumerian
8. Why was the invention of the symbol for zero important?
 - (a) It was better than the Roman system.
 - (b) It allowed you to write numbers up to one hundred.
 - (c) It allowed you to write very large numbers.
 - (d) It was useful for accounting.
9. The golden ratio is...
 - (a) a number made of gold.
 - (b) found in numbers.
 - (c) a special number found in nature.
 - (d) All of the above.
10. How do computers count?
 - (a) With a code of 1s and 0s
 - (b) With Roman numerals
 - (c) With the golden ratio
 - (d) With Egyptian numerals

Glossary

- **abacus** a counting device that uses beads
- **binary** a number system with only two numbers: 0 and 1
- **code** a set of letters, numbers, or signs used to represent a message
- **digital calculator** an electronic device for counting numbers
- **dimension** a measurement of the length, width, or height of something
- **golden ratio** a number found in nature whereby one side is 1 and the other is 1.618
- **mark** a line or scratch
- **multiple of** the number of times a number is increased
- **notice** to see something and be aware of it
- **object** a non-living thing such as a table, rock, or flower
- **represent** to be a sign or symbol of something
- **sequence** a series of numbers in order
- **symbol** a character or number that represents something else
- **value** a numerical amount