

A WILLIAMSON  KIDS CAN!® BOOK



THE  
SECRET LIFE



MATH



Tracing Its Routes  
(& Its Roots)  
Around the World



Ann McCallum

# It's Amazing...

Did you know that math is: (Choose the best answer)

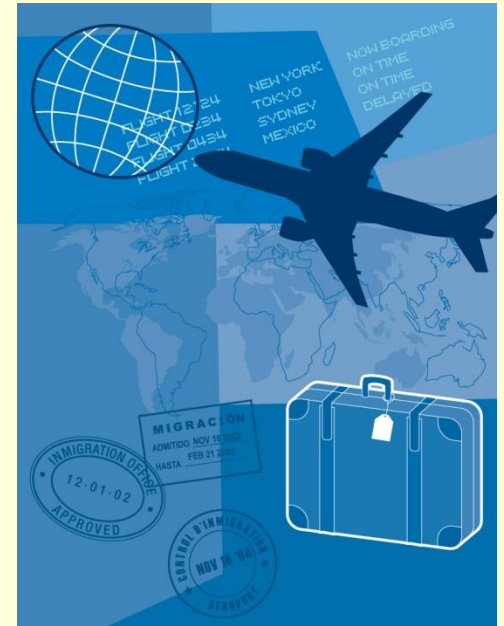
- a) more than 35,000 years old?
- b) older than the invention of the wheel?
- c) older than just about everything else humans have ever invented?
- d) all of the above

# Who invented math and why?

Was it:

- a) Dinosaurs or some other prehistoric creatures who stumbled across it in some way?
- b) Teachers who wanted to give their students more homework so they would stay away from the TV?
- c) Let me think about it and I'll get back to you later.

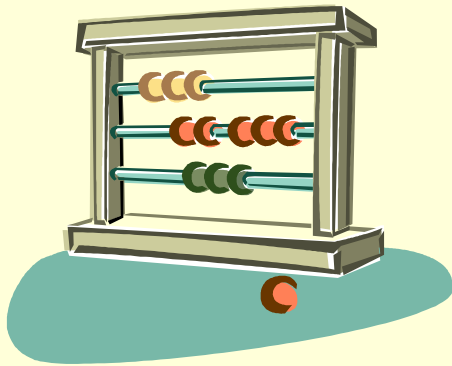
# Who has ever been to another country or state?



- Did people count and measure there?
- Did people have money, tell time and record amounts?
- How do you use math every day?

# The Secret Life of Math...

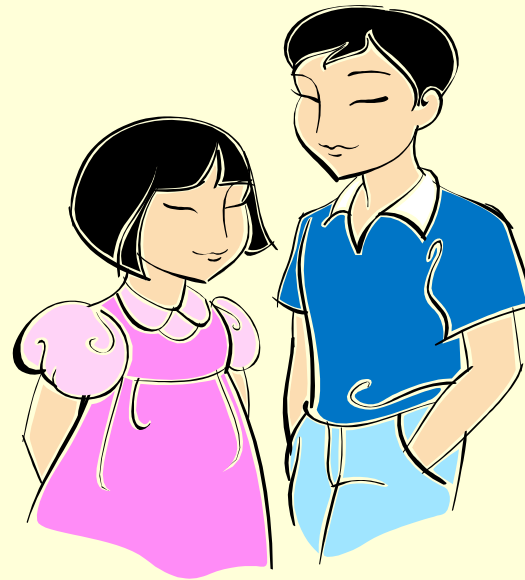
It turns out that, all over the world, math was developed in amazingly similar ways by distant peoples who had no communication with one another (and didn't even know of one another's existence!)



# KEEPING TRACK...

**Hey, not so random question:**

Show me (that means without talking)  
how many brothers and sisters you  
have.



# Keeping Track:

How humans invented methods...

People the world over have been using *digits* to count- that is, they have been using *fingers* and *toes*.



*Digits are the original counting machines- and they are not about to go out of style!*

Here's an interesting way to keep things straight:

If you wanted to buy a loaf of bread in 17th century England, you'd need to bring your half of a set of sticks. The baker would notch his and your tally sticks at the same time to record your purchases.



# Eenie, Meenie, Minie, Morra!



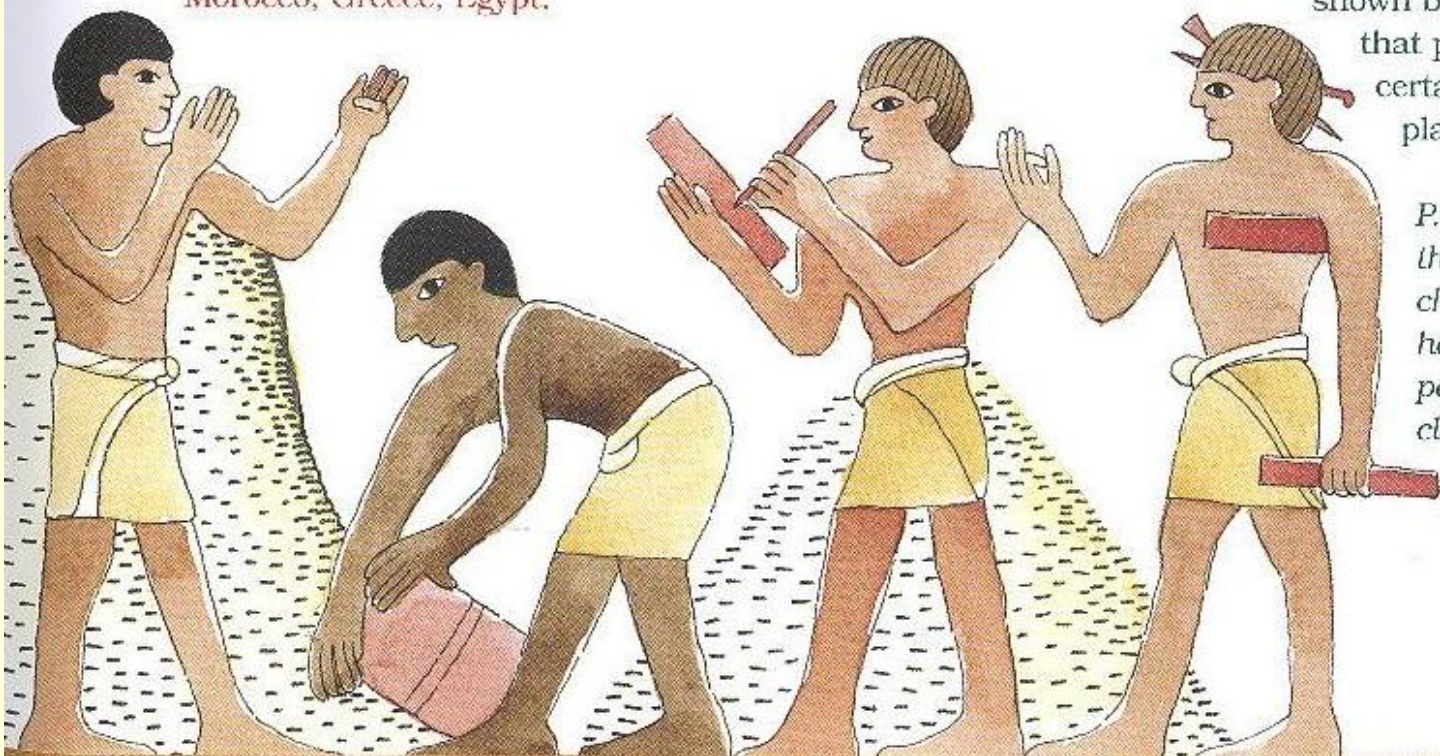
Play Morra, the simple and very popular finger-counting game that's been enjoyed by people the world over throughout time. Even though it is an ancient game, it is still played in Italy, France, Spain, Portugal, Morocco, Greece, Egypt,

Syria, Iraq, and China. It's also a good way to choose someone to be "It" for other games!

**To play:** Two players stand face to face, each holding out a closed fist. On the count of three ("one, two,

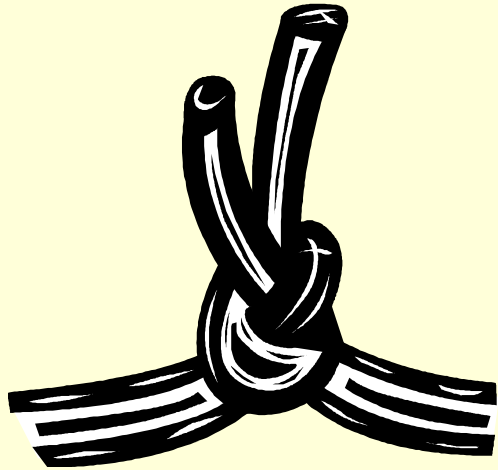
three!"), each player shows as many fingers as he chooses and at the same time calls out a number from 1 to 10. (If you use both hands, you call a number from 1 to 20.) If the number called by a player is the same as the number of *all* the fingers shown by *both* players, then that player wins a point. Play a certain number of rounds, or play to a certain point score.

*P.S. If no one is winning, then either narrow the choices by using only one hand each, or play that the person wins who comes the closest without going higher than the real number.*



# KEEPING TRACK WITH KNOTS

How knots and numbers go together...



# Instant messaging- KNOT!

Picture this:

You are a wealthy emperor whose land stretches far and wide into the mountains of western South America. It's 1475 and it's time to collect taxes from the people who live on and work the lands. You have no written language.

**How do you keep track of who owes what?**



You use a  
quipu!  
(A huh?).



# Writing it down:

## Towards a Universal Language

A Major leap forward for mankind



Counting balls to counting in  
Cuneiform...

# Recording numbers

In 8000 B.C. there were still no written numbers, but people had gotten pretty good at keeping track using pebbles, shells, knots, or other small things.

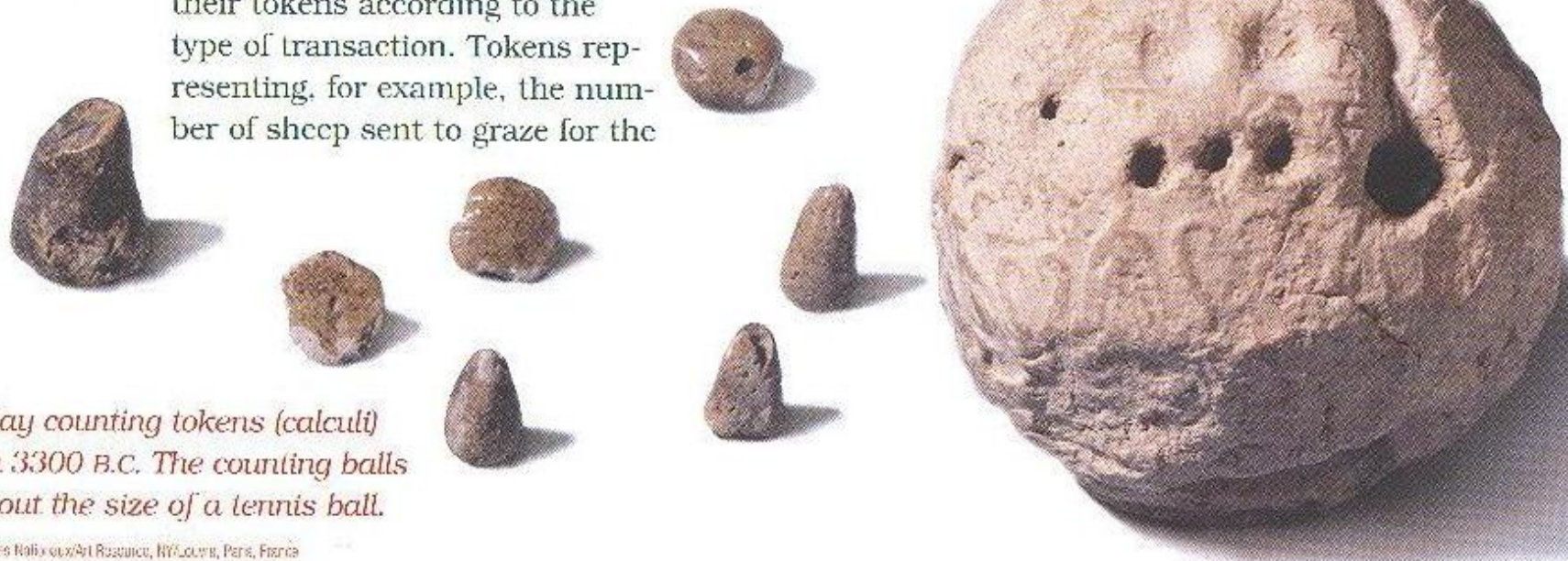
In **Mesopotamia**, people used small **tokens** made from clay.

To keep the numbers straight, they stored the tokens in **counting balls**.

## Good-bye to pockets full of pebbles!

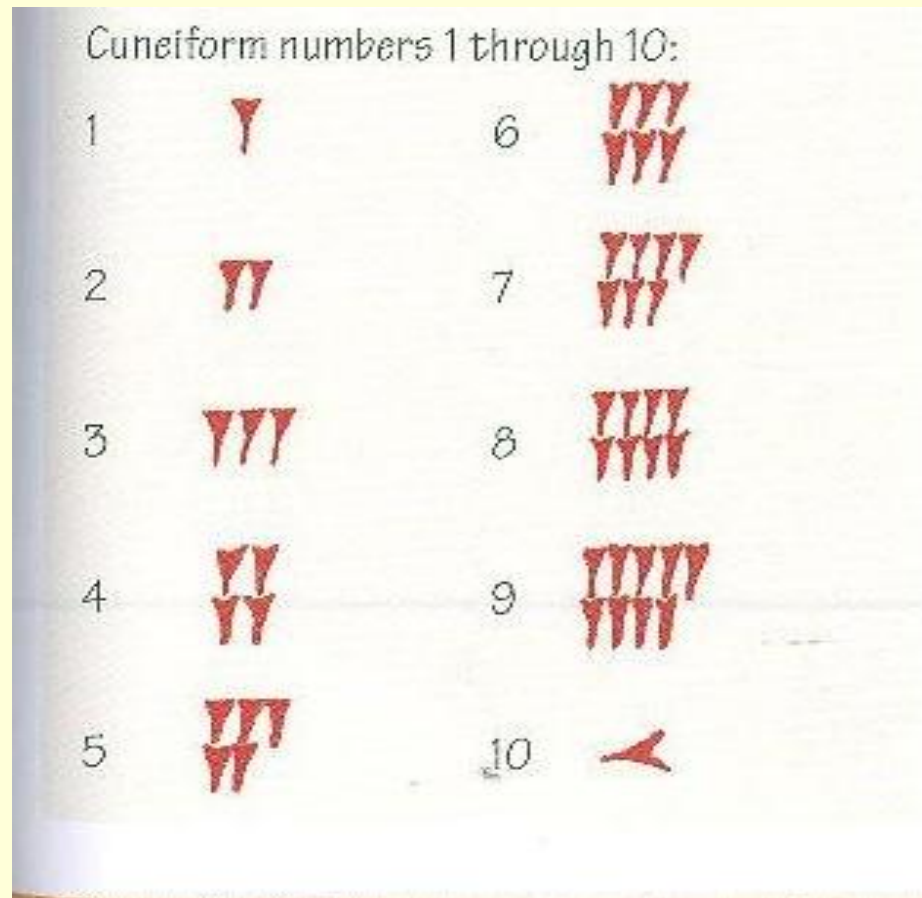
When you have a group of similar items, what do you usually do? If you said that you find a way to store them together, such as by using a rubber band, a shoe box, or an envelope, then you and these ancient peoples think alike. Some very clever accountants in the Mesopotamia region thought to store their tokens according to the type of transaction. Tokens representing, for example, the number of sheep sent to graze for the

summer were placed in a *counting ball*—a hollow ball made out of clay that could be sealed shut and kept safe over periods of time. When the herd came back at summer's end, the ball was broken open, revealing the tokens, and the record-keeper could make sure all the sheep had returned. It was an ingenious counting and record-keeping system!



*These clay counting tokens (calculi) are from 3300 B.C. The counting balls were about the size of a tennis ball.*

# COUNTING IN CUNEIFORM

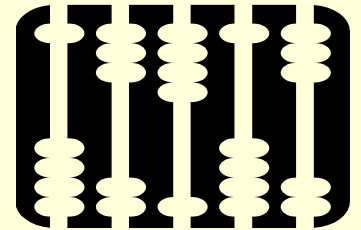


# Mayan Number Cookies...

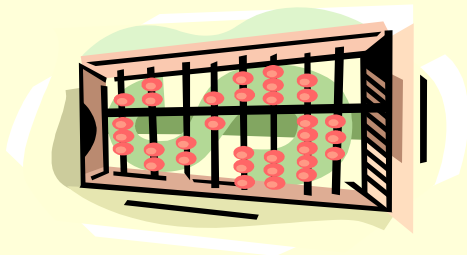


# Hi-Tech Math, the Low-Tech way

Did you know that the ancient Chinese invented gunpowder, umbrellas, and handy calculating tools?



The Chinese used counting rods and then, a little later in history, they used the abacus.





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# The Secret Life of **MATH**

Discover how (and why)  
numbers have survived  
from the cave dwellers to us!

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