

The Amerindians and Number

Chapter 2
Amy Varner



Background Info

- Canada, United States, & Central America
- Life was oriented toward hunting and tribal war
- Diverse in character
- Could count, no abstract calculations
- No numerals (orally or tallied)

Achievement in Tribal War

- Eagle Feathers
- 1. Number
- 2. Position
- 3. Slope



Counting Methods

- Fingers & Toes (20)
- Wood & Pebbles
- Tallies
- Lack of numerals, impossible to refine the concept of a #
- No evidence of \times or \div



Crucial for the Development of Numbers

- Invention of money
- Invention of calendar
- Measurement of time
- Use of weights and measurements

Time is like Money

- Can be divided into units
- Example: passage of time is the first discovery on the way to the concept of a calendar
- Natural time units can be established by study of the movements of star constellations, the sun, & the moon

The Calendar

- ◉ No 'true' calendar
- ◉ Meaning a single system of reference tying the cyclical nature of natural events to a scientific formula measuring passing time and predicts future events

More Calendar

- A day = A Unit
- Did not attempt to name days
- Recognize Sequences
- A unit could turn into a larger or smaller unit
- Piled bundles of sticks
- “Ad hoc” tallies of days on wood
- “Seven moons ago”
- “Ten winters ago”



The Incas

- Central & South America in 13th century
- Strong empire that expanded

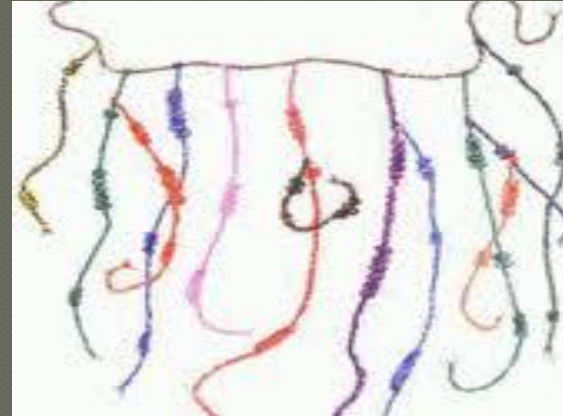


What They Had

- ◉ No written language
- ◉ Set up a system of taxation & government
- ◉ Records kept QUIPUS (knot) cords tied together
- ◉ Many knots to a set, one set to a cord
- ◉ Cords coded by color, stood for different kinds of animals

Quipus

- Uses: Animals hunted, tax records, herd size
- Where: China, Greece, Hawaii, Africa
- Not completely clear how the ancient Incas used QUIPUS: memory device (simple totaling)



Here's a Link!

- ◎ <http://www.youtube.com/watch?v=7Mo8To16fFE>

Number System

- Base ten, minor base of five
- Based on position
- 'Numerals' included a zero (Blank space on the cord)
- Color = Place Value
- Stands = Units
- Any number between 0 and 100,000

Alternatively

- ◎ Colors = Inventory
- ◎ Tax records, land grants, economic production, religious ceremonies

In Conclusion

- Chief interest of the QUIPU was that it used the decimal system (base ten)
- May have been a universal “QUIPU Stage” in the history of number, replacing the earlier tally mark system