

Chapter 2: The Amerindians and Numbers

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Before European Invasion of the Americas...

- The continent was inhabited by over 500 different native groups
 - Small communities
 - Federations
 - Big enough to be considered nations
- Believed to cross the Bering Straits from East Asia 10,000 years ago (Ice Age)



Amerindians from the North

- Life based on hunting, tribal war, and religion
- Made very few advances in science or with number
 - They could count
 - Could only pass on calculations orally or tally marks (often scratched on the ground)

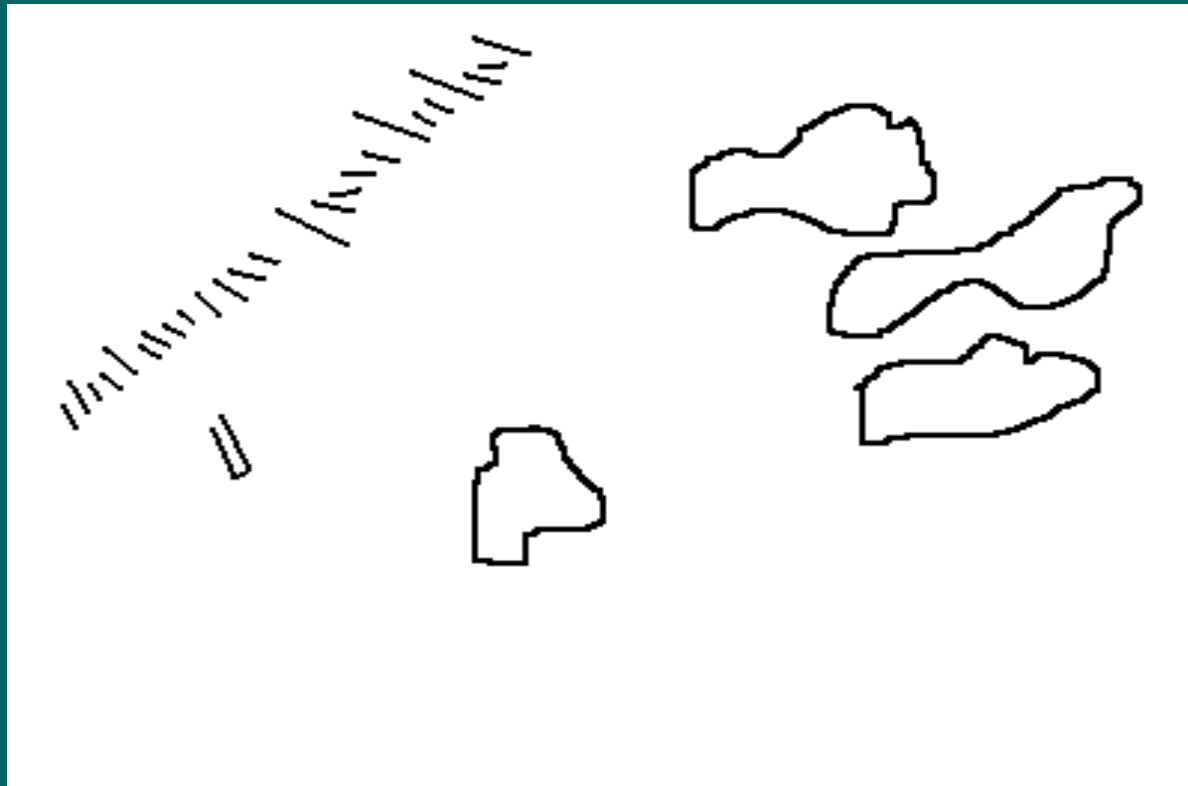
...from the North Continued



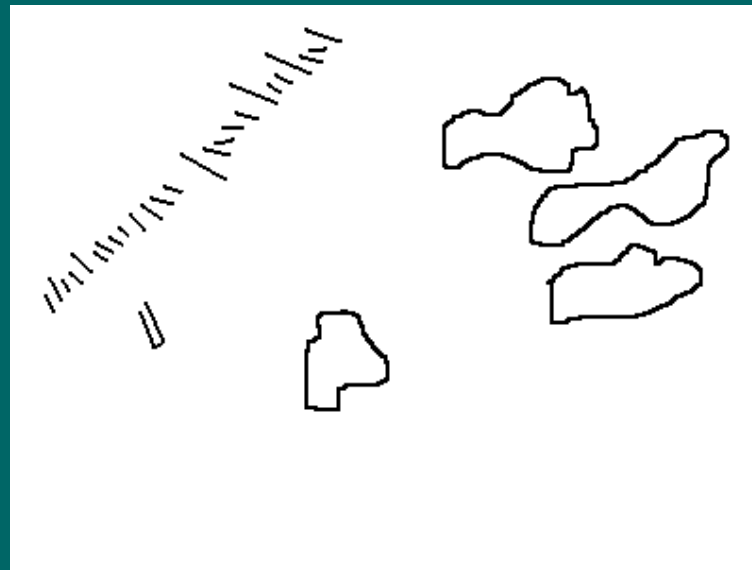
- Used different signs and objects for calculations:
 - Special signs on a war tunic, headdress, or leggings: number of war-parties and enemies killed
 - Number, position, and slope of eagle feathers on headdress along with their shapes, cuts and markings: owner's military status

Guessing Game

What does this mean?



Answer



- This is an offer for a trade: four animal skins (one buffalo and three others) for a rifle with twenty-five cartridges

The Calendar

- No North American indigenous civilization worked out a *true* calendar: *a single system of reference combining nature and natural events to a scientific formula that measures the passing of time and can reasonably predict future events.*
- **Days were recognized as a form of unit**
 - There was nothing to distinguish them (like names)
 - No sequences were recognized: weeks and months
 - Days were not broken into seconds, minutes, or hours

Calendar Continued



- Ancient civilizations measured a day as the time from sunrise to sunset.
 - Nothing was recorded about the differences in the length of a day during different seasons

Incas

- Established an empire that covered a million square miles
- *Quipus*: (quipu is the Incan word for “knot”) consists of several lengths of cord tied together
 - Records were kept with this but nothing is known for sure on how the Incas specifically used this system

Theory

- Incas might have used a base of 10 with a minor base of 5
 - Hierarchy of groups that each had an appointed leader: The standard size of groups were: 10, 50, 100, 500, 1000, 5000, and 10,000.
 - Census for every region were kept record by the use of quipu
 - Different colors of the knot would indicate a different place value
 - 5 places were the normal limit for counting so this could be used to record any number between 0 and 100,000

Another Theory



- Colors were used for inventory
 - Tax records, land grants, economic production, religious ceremonies (including tallies of those killed for human sacrifice), and military information

Story



A man took a piece of cord and tied eleven knots in it. Before leaving on a journey he gave the cord to his wife and pointing to each knot, he started to explain his trip to her. He explained that the first knot would be tomorrow and he would be on the road, the same with the next two days. He said he will reach his destination on the fourth day and stay there on both the fifth and sixth days. On the seventh day he would begin his journey home. He then instructed his wife to untie a knot each and every day. When she had untied the tenth knot she should begin cooking for him because on the eleventh day he would be home and would be hungry.

Recap of Incas

- Calculations were still done on fingers, toes, and with pebbles
- The quipu knots were simply mnemonic devices used to remember their totals
- Their number system began to use decimals (base 10)

THE END

