4—The Inca Quipu

The Inca civilization ruled in parts of South America from 1400 to 1560. The Incas had no written language as far as we know. They kept all their records by using long cotton or wool strings tied with many different knots. These strings or cords are called quipus.

A quipu had one main cord with many cords hanging from it. The Incas used many different colors for their cords. The quipus were mostly used to keep records of crops and population. Some quipus had as many as 2000 cords! The quipus were folded and carried from city to city. In this way, data or information was able to be communicated from place to place. Because of this, quipu makers were very important to their society.

The Incas used a decimal (base 10) number system just as we do. In base 10, the number 6354 means (6 X 1000) + (3 X 100) + (5 X 10) + (4 X 1). This way of writing a number by showing the place value of each digit is called expanded notation.

In a quipu, each knot represents a digit. Where the knots are placed represents its place value. The quipu was not used as a calculator but as an instrument to store information. The Incas knew the importance of numbers and had a very advanced system of record keeping. Study this quipu diagram below.

Questions

1. How many years did the Incas rule? _______Show work.

   Give the number of the sentence that provides the best evidence for your answer.
   ______

2. Was the quipu used to multiply and divide numbers? _______Why or why not?
   Explain with one complete sentence.
   _____________________________

   Give the number of the sentence that provides the best evidence for your answer.
   ______

3. Based on the text, which is true? Circle the letter of the best answer.
   a. The Incas used ink and paper to keep crop and population records.
   b. The Incas used a number system with the same base that we use.
   c. The Incas left many books explaining their civilization.
   d. You would need 11 knots to represent the number 11.

   Give the number of the sentence that provides the best evidence for your answer.
   ______

4. Write this number in expanded notation: 4,231
   _____________________________

5. What number is (8 X 1000) + (3 X 10) + (5 X 1)? __________________

6. What is the smallest number a quipu with eight knots using two place values can represent? ____________

   Use complete sentences to explain your thinking.
   _____________________________

   _____________________________
7. In Inca City A there are 513 people. In Inca City B there are 605 people, and in Inca City C there are only 21 people. Finish drawing the quipu below to record this information. Use the diagram on page 8 to help you. You may use colors.

City A  City B  City C