



## **“Adding It Up” at James Fort**

**Subjects:** History, Math/3<sup>rd</sup> and 4<sup>th</sup> grade

Skills: Observe, calculate, analyze

Strategies: Cooperative learning, hands-on, discovery

Time: 30 to 45 minutes

Class size: work in teams

### **Objectives:**

Math

- 3.24 The student will recognize and describe a variety of patterns formed using concrete objects, numbers, tables, and pictures, and extend the pattern, using the same or different forms (concrete objects, numbers, tables, and pictures).
- 3.25 a) Investigate and create patterns involving numbers, operations (addition and multiplication), and relations that model the identity and commutative properties for addition and multiplication.
- 4.5 The student will estimate whole-number sums and differences and describe the method of estimation. Students will refine estimates, using terms such as *closer to*, *between*, and *a little more than*.
- 4.6 The student will add and subtract whole numbers written in vertical and horizontal form, choosing appropriately between paper and pencil methods and calculators.

Virginia Studies

- VS.1 The student will develop skills for historical and geographical analysis including the ability to
- a) identify and interpret artifacts and primary and secondary source documents to understand events in history;

The student will:

- Identify historic math strategies from the early James Fort period.
- Use historic style counting sheets and artifacts to understand adding and calculations in early 17<sup>th</sup> century Jamestown.
- Apply critical thinking skills to organize and use information.
- Calculate and record different sums based on historic counting methods.
- Draw inferences and identify parallels with today's numeric systems.



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tens

--- ◎ --- ◎ --- ◎ --- ◎ ---

**Procedure:**

1. Guide the lesson by explaining jettons and their archaeological importance at Jamestown.
2. Show students some of the examples given.
3. Discuss the following questions:
  - What number would we use to divide categories? (We work on a system based on tens.)
  - Why would roman numerals be hard to add? Illustrate by trying to subtract IV from XVI.
  - Is there another calculation system similar to this one? The abacus is likely to be familiar to your students.
  - Could this be organized with a different number than 5? Which ones might work? (Only five or ten will work with the lines divided into groups based on tens.)
  - After practicing with the examples supplied, have the students work out their own jetton arrays. They can work in teams or pairs and test each other.

**Closure:**

Show the students pictures of the jettons supplied. Talk about their use as a token, not as currency. Many may have been used as trade goods, so they had multiple purposes. Distinguish the difference between trade and currency (money). Where do we use tokens to represent money today? Students may be familiar with game tokens, subway tokens and bus passes.

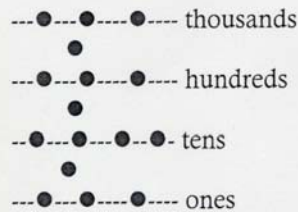
**Resources and materials: Historic Account**

Discuss with your class that all italic items are in the original form and differ from English language usage today.

*“So that to reckon up this number, it doth consist of Four Thousand Three Hundred Twenty One Millions, Eighteen Thousand, Three Hundred Forty Five.*

*But Country People and Farmers, reckon or count their numbers more simply: by Pairs, half Scores or Tens, Dozens or Twelves, and Scores or Twenty’s.*

*At length a way was found out to cast up any summe by Counters, which was by four even lines running parallel on the lower line, were Counters laid for Unites, or any sum not exceeding Ten: on the second Line or next to the lowest was Counters laid for Tens; the third Line Counters for Hundreds; and the highest Line for Thousands: as for Example,*

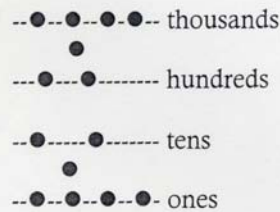


*Where note, that every Counter set between the Lines signifies Five more than the Line of Number it stands over, and Five times short of that Number of that Number of that Line it is under. So that to summe up this Number it is just Three Thousand, Eight Hundred, Ninety Eight. (3,898)*

**Practice Jetton Arrays: Sample questions**

#1

#2



What is this sum? \_\_\_\_\_

----- thousands
----- hundreds
----- tens
----- ones

**show 2,954**



--●----- thousands

●

--●----- hundreds

--●--●--●-- tens

●

--●--●-- ones

What is this sum? \_\_\_\_\_

----- thousands

----- hundreds

----- tens

----- ones

**show 8,386**

--●--●--●-- thousands

--●--●----- hundreds

●

--●--●----- tens

●

--●--●--●-- ones

What is this sum? \_\_\_\_\_

----- thousands

----- hundreds

----- tens

----- ones

**show 5,257**

--●----- thousands

●

--●--●--●-- hundreds

--●--●--●-- tens

●

--●--●--●-- ones

What is this sum? \_\_\_\_\_

----- thousands

----- hundreds

----- tens

----- ones

**show 6,839**