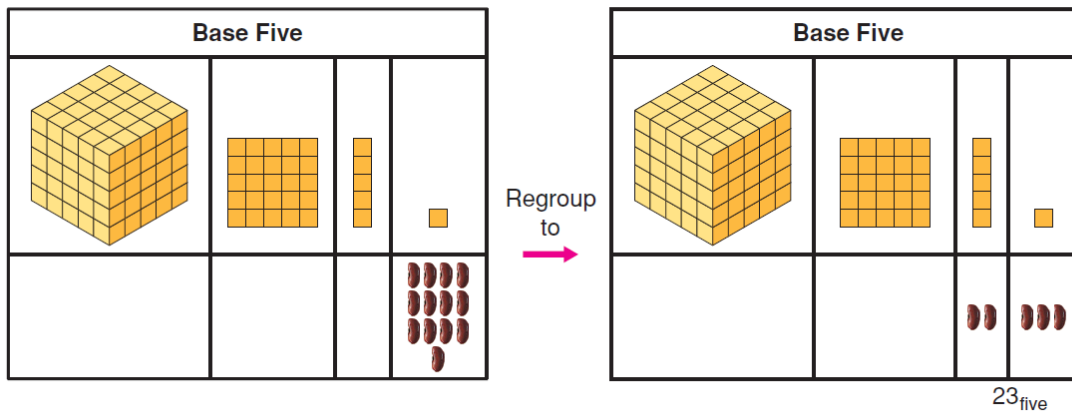


AA 3.1 TI #6

Understanding	Accuracy	Communication	Presentation	Total
2	a) 2 b) 2 c) 2	2	2	12

6. *Math Concepts:* The place value chart model for numeration (see the Introduction to this Activity Set) consists of a chart with columns on which markers are placed. This model can represent any base, with the columns, starting on the right, representing units, longs, flats, and blocks, respectively, in the given base. Using base five, for example, each group of five markers is replaced by one marker in the next column to the left. In this diagram, 13 markers in the units column, grouped by fives, result in two markers in the longs column and three markers in the units column, or 23_{five} .



When grouped by fours (base four), regrouping the same starting set of 13 markers, as shown on page 68, results in three markers in the longs column and one marker in the units column, or 31_{four} .

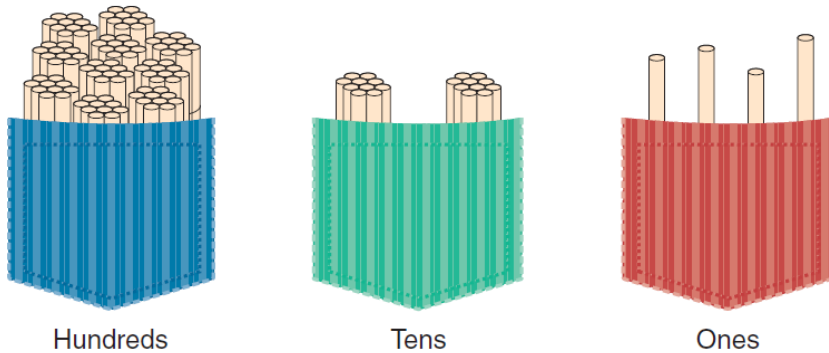
- Sketch a place value chart after 19 unit markers have been traded using base three. Record the resulting base-three numeral below the chart.
- Sketch a place value chart after 15 unit markers have been traded using base two. Record the resulting base-two numeral below the chart.
- Explain how this model differs conceptually from the multibase piece model that we have previously considered.

A 3.1 TI #7

Understanding	Accuracy	Communication	Presentation	Total
2	a) 2 b) 2	2	2	10

7. *Math Concepts:* A common elementary school activity is to create a display to show sticks, stick bundles, and stick bundles of bundles to count the number of days, so far, in the school year. Each school day a stick (or coffee stirrer) is added to the ones pocket; the sticks are rebundled and moved as needed, and the children write out the corresponding base-ten numeral modeled by the sticks and stick bundles.

a. What base-ten numeral is modeled by the following display?



b. If there are 190 school days in the school year; how many times will the children rebundle sticks from the beginning to the end of the school year? Describe and list each rebundling.