1067-Z1-480   **Patricia Baggett*** (`baggett@nmsu.edu`), Dept of Math Sci, MSC 3MB PO Box 30001, New Mexico State University, Las Cruces, NM 88003-8001, and **Andrzej Ehrenfeucht** (`andrzej.ehrenfeucht@colorado.edu`), Computer Science Dept., PO Box 430, University of Colorado, Boulder, CO 80301-0430. *Counting.*

Counting a large number of items is hard. People and animals are moving. Objects are spatially dispersed. Events are spread over time. So usually one counts small numbers of items at one time, creates a written or electronic record, and finally sums the numbers. This was not always the case. In pre-literate societies in the Middle East (e. g. Sumerian), records were kept by creating tokens that represented real items. Of course counting tokens is much easier than counting the real things. But independent of its practical value, counting a large numbers of small objects (such as the number of beans in a one pound bag) can be a valid task for young children in early elementary grades, because many of them are fascinated by large numbers. We don't know how counting was done in the distant past, but we can theoretically evaluate the feasibility of different algorithms. We describe an algorithm of "counting by partitions", in which most of the work can be done by someone with no mathematical knowledge. We analyze its feasibility from the point of view of the "human resources" that are needed to make it practical, and we compare it to counting algorithms taught in American schools. We conclude that "counting by partitions" is practically feasible, but "school algorithms" are not. (Received September 06, 2010)