Paper and stone calculator

5000s

1000s ★

500s

100s

50s

10s

5s

1s
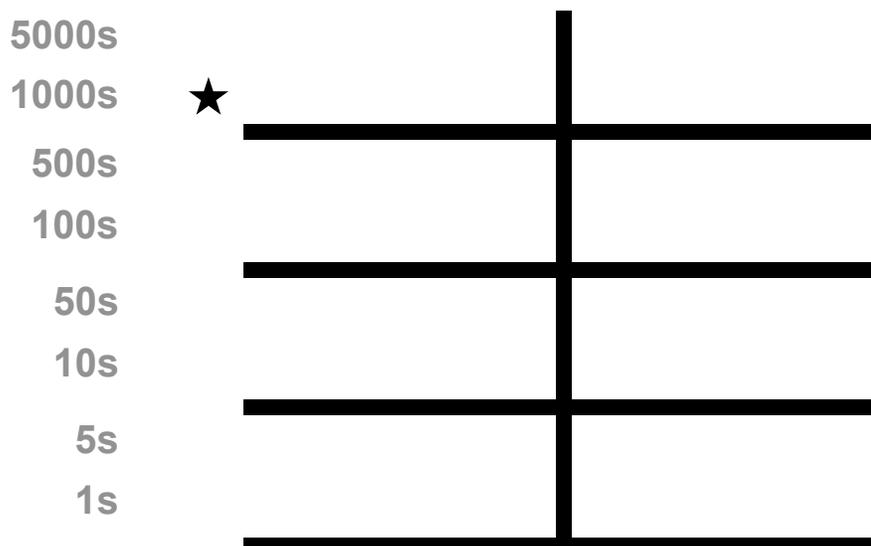
This is a drawing of a counting board, which is easy to use for doing addition and subtraction. It works like an abacus. You put stones on it to do sums. The stones are called *counters* (which is why we use counters in board games). Shops and banks used counter boards upto about 400 years ago — which is why you still go to "the counter" to pay.

This counting board has two areas, left and right of the vertical line. You count one number out to the left of the line, and the other number you count out on the right.

How are numbers represented on a counting board? The modern numbers we've written to the left would not have been there (counting boards were used when people still used Roman numerals). The ★ shows where the 1000s line is used, just as we use commas in numbers like 2,345.

Each counter placed on a line represents 1, 10, 100 or 1000 depending on which line it is on. Two counters on the 10s line would represent 20, for instance.

A counter put *between* lines represents 5, 50, 500 or 5000. If you wanted to represent 602, you would put two counters on the bottom line, one on the 100s line, and one above it on the 500s 'gap.'

Here is one way to do addition: Place counters in the left and right columns to represent the numbers you want to add. Then start at the bottom and work upwards, as follows: Slide all the 1s counters together. For every 5 of the 1s counters, remove them and put one counter in the 5s gap (that is, above the 1s line). For every pair of 5s, remove both and put one on the 10s line. Carry on up the board. As you simplify working up the board, you will be adding numbers. You can see why we use words like *carry* and *borrow* for doing sums: you lift counters up and literally carry them, and you borrow them (in subtraction).