

Napier's Bones Description

Background

John Napier (NAY-peer), 1550-1617

Scottish nobleman

Invented logarithms, worked in spherical trigonometry, and designed "Napier's rods" (a mechanical calculating aid)

Reference: *Mathematicians Are People, Too*

Reimer & Reimer

Dale Seymour Publishing

1990

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Instructions for making Napier's rods:

1. Give each student a copy of the square grid to cut out. Cut along the dotted lines so that you have eleven strips. (attached)
2. Line up the numbers for the multiplication problem using the rods.
3. Read off the answer by adding diagonally between the bold lines.

Example:

$46 \times 4 = 184$

	4	6	X
0	4	0	1
0	8	1	2
1	2	1	3
1	6	2	4
2	0	3	5
2	4	3	6
2	8	4	7
3	2	4	8
3	6	5	9

$$\begin{array}{r} 1 \\ \hline 1 \end{array} \quad \begin{array}{r} 6 + 2 \\ \hline 8 \end{array} \quad \begin{array}{r} 4 \\ \hline 4 \end{array}$$

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X	0	1	2	3	4	5	6	7	8	9
1	0 0	0 1	0 2	0 3	0 4	0 5	0 6	0 7	0 8	0 9
2	0 0	0 2	0 4	0 6	0 8	1 0	1 2	1 4	1 6	1 8
3	0 0	0 3	0 6	0 9	1 2	1 5	1 8	2 1	2 4	2 7
4	0 0	0 4	0 8	1 2	1 6	2 0	2 4	2 8	3 2	3 6
5	0 0	0 5	1 0	1 5	2 0	2 5	3 0	3 5	4 0	4 5
6	0 0	0 6	1 2	1 8	2 4	3 0	3 6	4 2	4 8	5 4
7	0 0	0 7	1 4	2 1	2 8	3 5	4 2	4 9	5 6	6 3
8	0 0	0 8	1 6	2 4	3 2	4 0	4 8	5 6	6 4	7 2
9	0 0	0 9	1 8	2 7	3 6	4 5	5 4	6 3	7 2	8 1