

Napier's Bones



- You need**
- cardboard
 - a classmate

- glue
- a photocopy of the strips

Activity

John Napier was a Scottish mathematician who invented a set of rods to make multiplication easier. These rods were called "Napier's Bones".



- 1 Study the strips below.
What patterns can you see in Napier's Bones?

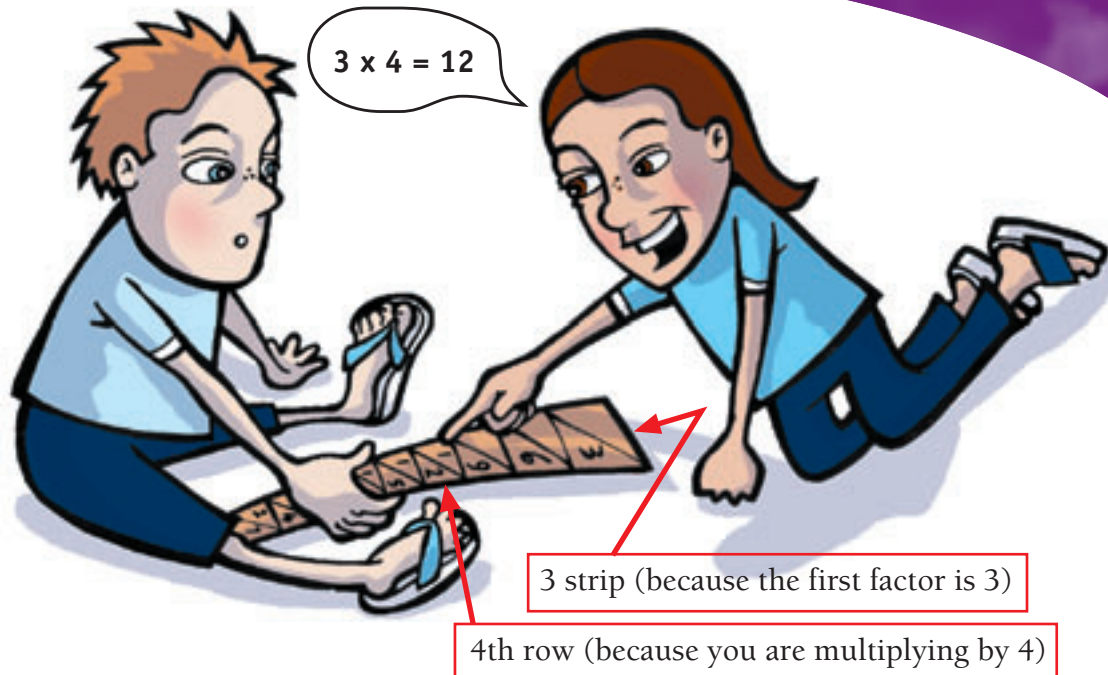
0	1	2	3	4	5	6	7	8	9
0	2	4	6	8	1	1	1	1	1
0	3	6	9	2	1	1	2	2	2
0	4	8	1	2	2	2	2	3	3
0	5	1	1	2	2	3	3	4	4
0	6	2	1	2	3	3	4	4	5
0	7	3	2	2	3	4	4	5	6
0	8	4	3	3	4	4	5	6	7
0	9	5	4	4	5	5	6	7	8
0		6	5	5	6	6	7	8	9
0		7	6	6	7	7	8	9	
0		8	7	7	8	8	9		
0		9	8	8	9	9			
0			9	9					



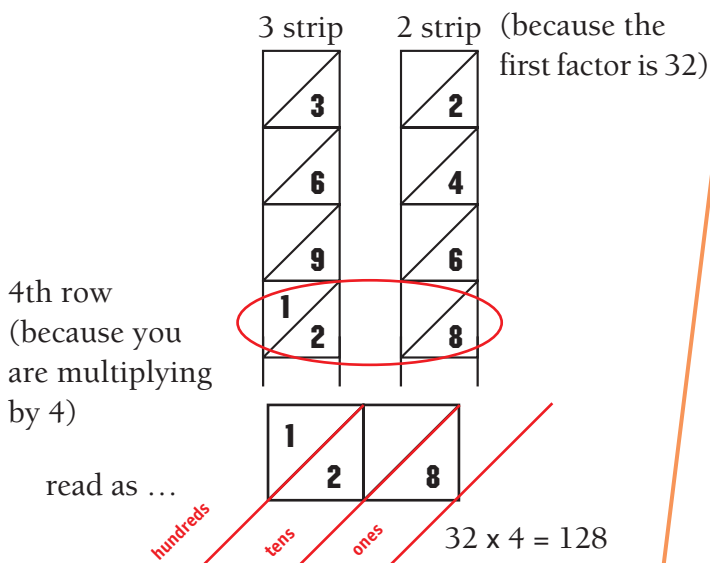
- 2 There are some interesting stories about John Napier. Look up his name in an encyclopaedia or on the Internet. Why were the strips called Napier's Bones?



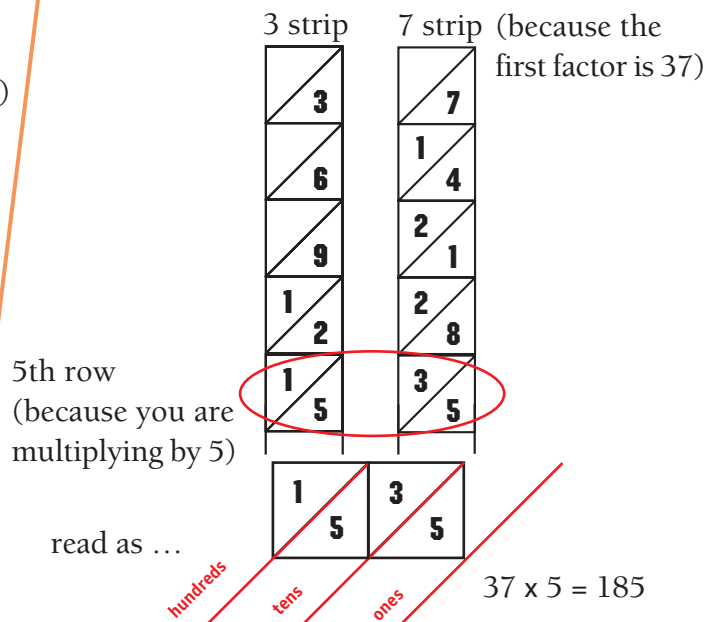
3. With a classmate, use the strips to find the value of simple multiplication statements, such as 3×4 , 3×5 , 3×8 , and 3×9 . What patterns can you see?



4. This is how Napier's Bones can be used to multiply 32×4 .



This is how Napier's Bones can be used to multiply 37×5 .



Compare 37×5 worked out in the written form below with the Napier's Bones method.

What do you notice?

$$30 \times 5 = 150$$

$$7 \times 5 = 35$$

$$150 + 35 = 185$$

5. Make a set of Napier's Bones like this: Glue a photocopy of the strips from page 8 onto cardboard and cut up the strips lengthwise.

Use the strips to work out:

- a. 21×6
- b. 68×7
- c. 53×8
- d. 34×9
- e. 30×2