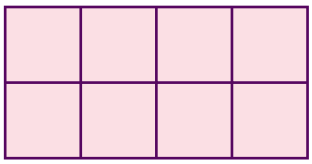
Rubber Band Rectangles

You need ☑ a 10 by 10 geoboard ☑ rubber bands ☑ string

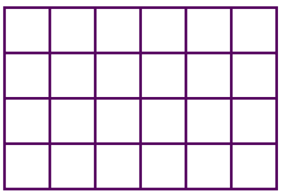
Activity

1. Elsie is using rubber bands to make rectangles on a geoboard. She notices a quick way of calculating the number of squares inside the rubber bands (the area).

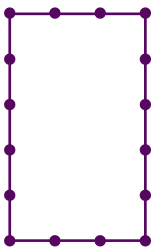


Use Elsie's method to work out the area of these rectangles:

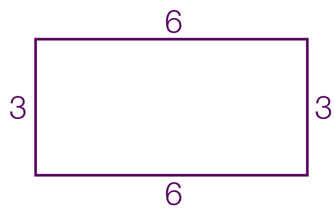
a.



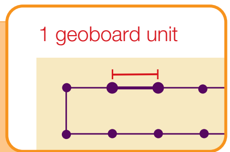
b.



c.



2. Next, Elsie looks at the perimeter of her rectangles.

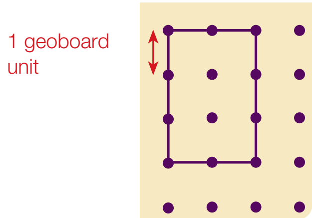


a. Discuss with a classmate what Elsie's method might be.

b. Draw a rectangle. On your diagram, show how this method for finding perimeters would work.

c. Use this method to work out the perimeters of the rectangles in question 1.

3. a. The rectangle below has a perimeter that is 10 geoboard units long.



Cut a piece of string 24 geoboard units long. Use it to explore how many different rectangular shapes with a perimeter of 24 units you could make on a 10 by 10 geoboard.

b. Are there any other rectangles that you could make with your 24-unit string that are too big for your geoboard?

4. Elsie starts recording the rectangles she could make with a 36-unit string if she had an extra-large geoboard. She uses a table to make sure that she has found all the different options. Complete the table to show all the rectangles she could make with her 36-unit string.

Width	1	2	3	4	5				
Length	17	16	15	14	13				

5. Now I'm going to explore area and perimeter together!

Using rubber bands, Elsie makes some rectangles that have an area of 16 squares.

a. How many different rectangles with an area of 16 squares can you make on a 10 by 10 geoboard? Draw them.

b. Are there any other rectangles with an area of 16 squares that won't fit on your geoboard? Draw them.

c. Which rectangle has the longest perimeter?

d. Which rectangle has the shortest perimeter?

6. Change the rectangle below to make its perimeter longer but its area smaller.