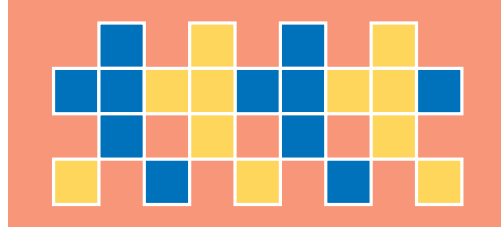


Frieze

You need: square grid paper

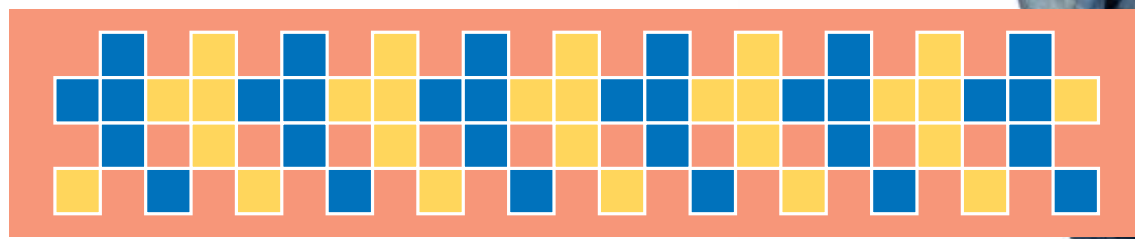
ACTIVITY

- Turi makes a design for a wallpaper frieze (a narrow band of decoration) to go around walls just under the ceiling.



She uses a short cut, $4 \times 5 + 2$, to work out the total number of squares in her design.

- Write Turi's short cut for the total number of squares in the design below.

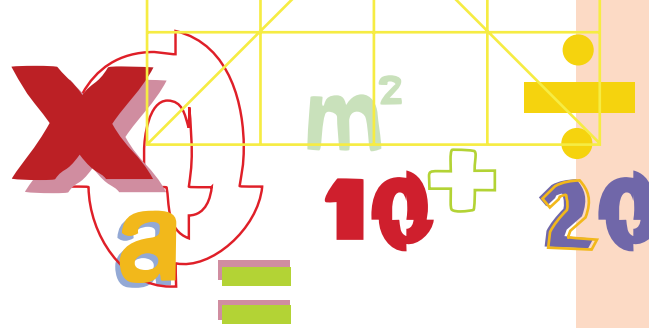


- On square grid paper, draw Turi's design that fits the short cut $6 \times 5 + 2$.
- Draw the designs for the last two short cuts in the table below and then complete the table.

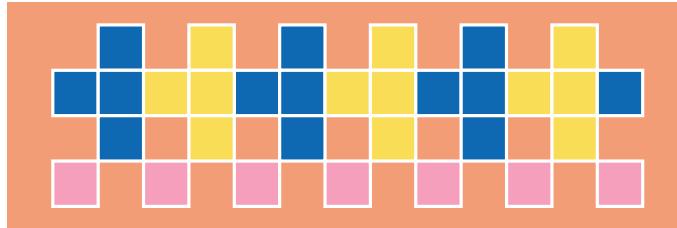
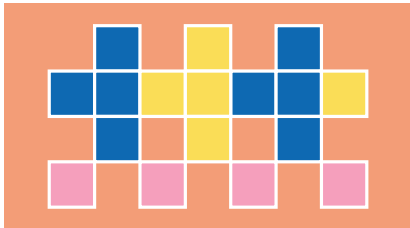
Short cut for number of squares	Total number of squares	Total number of blue squares	Total number of yellow squares
$4 \times 5 + 2$	22		
$6 \times 5 + 2$			
$8 \times 5 + 2$			
$10 \times 5 + 2$			

- Look carefully at the table and then predict the total numbers of blue squares and yellow squares in a design with a short cut of $1\ 000 \times 5 + 2$.
- See if you can predict the total numbers of blue squares and yellow squares in a design with a short cut of $1\ 001 \times 5 + 2$. Explain your reasoning.





2. Turi's friend Rory makes a different frieze design.



Look closely at Rory's designs and then complete the tables.

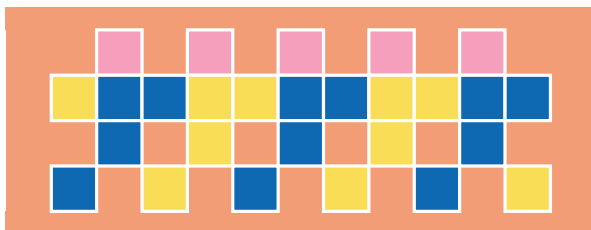
a.

Number of pink squares	Total number of blue and yellow squares
4	$3 \times 4 + 1 = 13$
7	
12	
37	
243	

b.

Number of pink squares	Total number of blue and yellow squares
2	$1 \times 4 + 1 = 5$
	29
	73
	97
	301

3. Devise a short cut or rule to help you complete the table for the frieze design below.



Number of pink squares	Total number of blue and yellow squares
5	
4	
10	
15	
256	
	82
	218

