

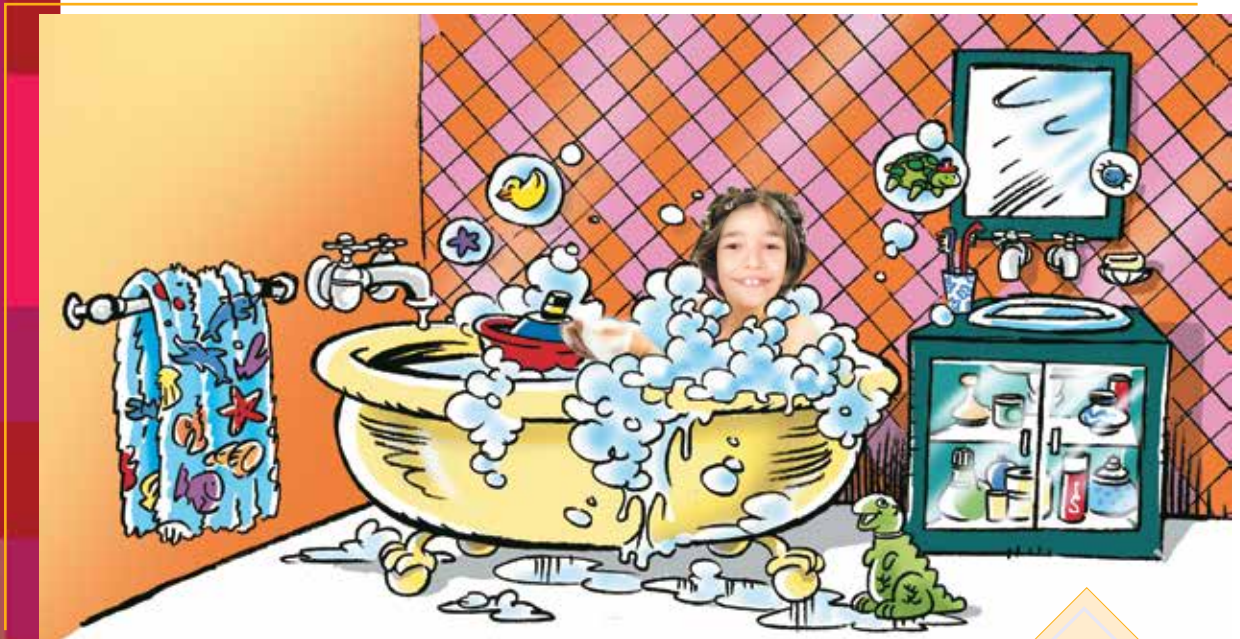
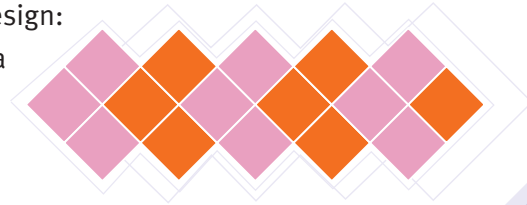
Bathroom Tiles

You need: square grid paper

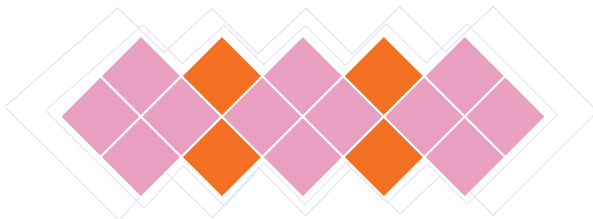
ACTIVITY

1. Lis always starts her bathroom tile design with pink tiles. She uses $5 \times 3 + 1$ tiles to make this bathroom tile design:

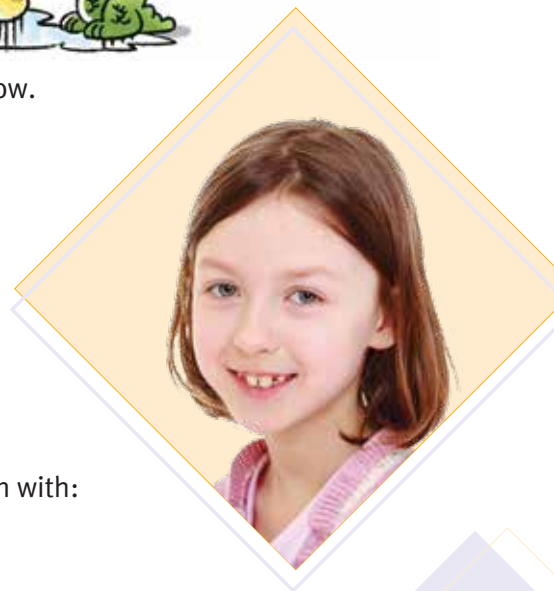
- Colour in squares on square grid paper to show a section of Lis's design that uses $8 \times 3 + 1$ tiles.
- Lis uses 31 tiles to make a section based on her design. Draw the section on squared paper.
- How many pink tiles and how many orange tiles does Lis use for a section with:
 - $20 \times 3 + 1$ tiles?
 - $37 \times 3 + 1$ tiles?



2. Ruth makes a bathroom tile design like the one below. She uses $3 \times 4 + 2 \times 2 = 16$ tiles for her design.

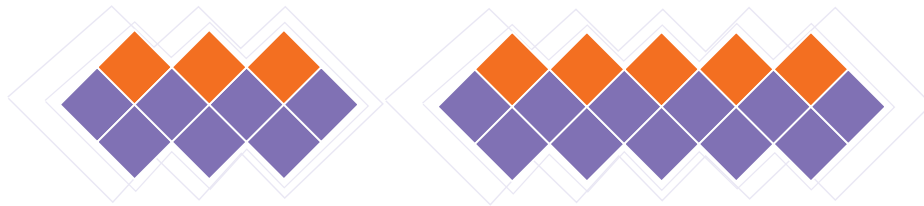


- Draw a section of Ruth's design that has $6 \times 4 + 5 \times 2 = 34$ tiles.
- How many tiles are used altogether for a section with:
 - 36 orange tiles?
 - 200 pink tiles?
- Complete the table below. Show your calculations.



Number of orange tiles	Number of pink tiles	Total number of tiles
8		
20		
28		
42		
156		

3. Bill makes this bathroom tile design:



- Bill predicts that a section of his design with 7 orange tiles has $7 \times 2 + 1$ purple tiles. Draw the design on square grid paper and check if Bill is correct.
- Explain how Bill's short cut calculation works.
- Use Bill's short cut to predict the number of purple tiles there are in a section that has 87 orange tiles.
- Complete the table below. Show your calculations.

Number of orange tiles	Number of purple tiles	Total number of tiles
4		
8		
11		
	43	
	101	



- Look carefully at your completed table from question d above and then complete the following tables. Show your calculations.

Number of orange tiles	Total number of tiles
	31
	52
	250

Number of purple tiles	Total number of tiles
11	
15	
37	

4. Gillian makes a different bathroom tile design.



- Devise a short cut, based on the design above, to predict the number of purple tiles in a section that has 8 orange tiles. Explain how the short cut works.
- Use your short cut to predict the number of purple tiles in a section of Gillian's design that has 47 orange tiles.
- Complete the table below. On it, show your calculations using your short cut.



Number of orange tiles	Number of purple tiles	Total number of tiles
11		
21		
37		
	44	
	58	
	198	