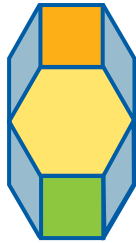# Tiling Teasers

You need: pattern blocks (optional)
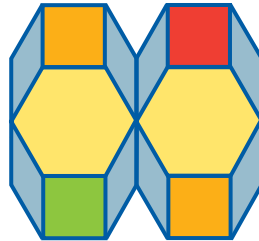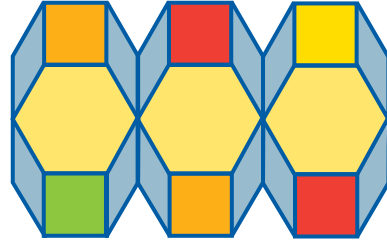
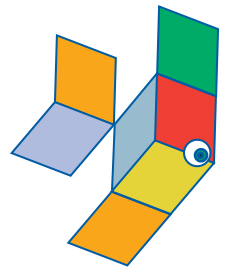These patterns were made with pattern blocks.

1. Jewels

1 hexagon
2 squares
4 rhombuses

2 hexagons
4 squares
8 rhombuses

3 hexagons
6 squares
12 rhombuses

a. Complete this table:

Jewels

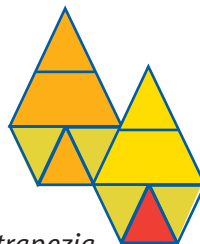| Number of hexagons	Number of squares	Number of rhombuses
1	2	4
2		
3		
4		
5		
6		
7		
8		
9		

b. Use your table to find a rule.
c. If you made this pattern with 10 hexagons, how many squares and rhombuses would you need?
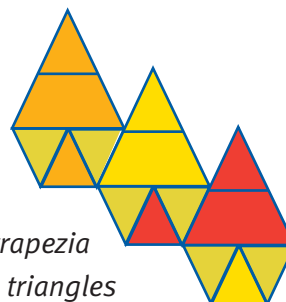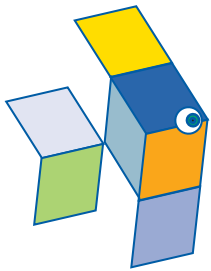
2. Yachts

1 trapezium
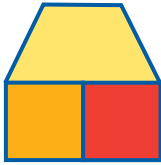4 triangles

2 trapezia
8 triangles

3 trapezia
12 triangles

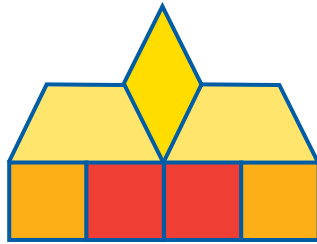a. Draw a table for up to 9 yachts (like the table in question 1) and find a rule.
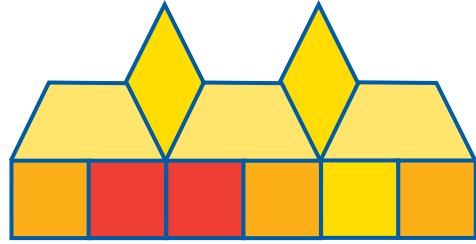b. If you made this pattern with 10 trapezia, how many triangles would you need?

Describing relationships from spatial patterns

3. Townhouses

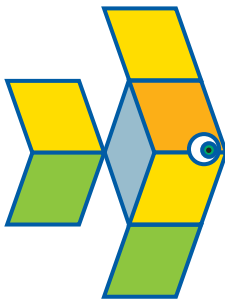1 trapezium
2 squares
0 rhombuses
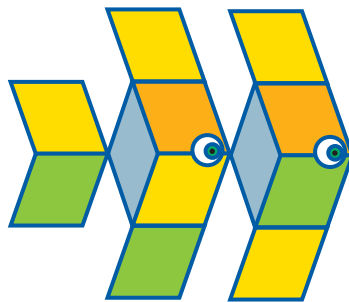
2 trapezia
4 squares
1 rhombus

3 trapezia
6 squares
2 rhombuses

   a.   Draw a table for up to 9 townhouses and find a rule.

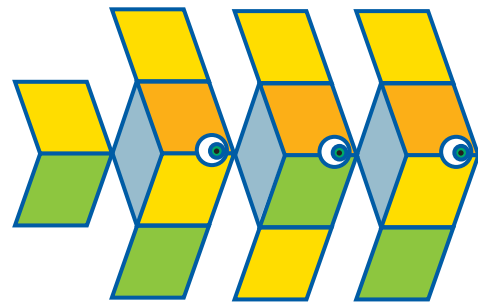   **b.**   If you made this pattern with 10 trapezia, how many squares and rhombuses would you need?

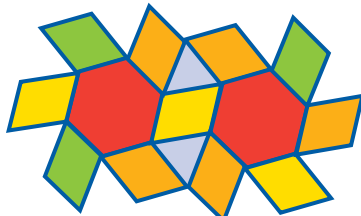**4.** Fish

7 rhombuses

12 rhombuses

17 rhombuses

   a.   Draw a table for up to 9 fish and find a rule.

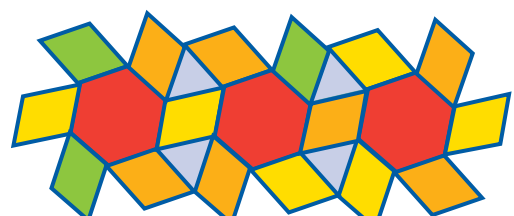   **b.**   If you made this pattern with 10 fish, how many rhombuses would you need?

5. Cogs

1 hexagon
6 rhombuses
0 triangles

2 hexagons
11 rhombuses
2 triangles

3 hexagons
16 rhombuses
4 triangles

   a.   Draw a table for up to 9 cogs and find a rule.

   b.   If you made this pattern with 10 hexagons, how many rhombuses and triangles would you need?