

# Reasoning and Problem Solving

## Step 4: Draw 2D Shapes

### National Curriculum Objectives:

Mathematics Year 2: (2G2a) [Identify and describe the properties of 2-D shapes, including the number of sides and line symmetry in a vertical line](#)

### Differentiation:

Questions 1, 4 and 7 (Problem Solving)

**Developing** Draw a 2D shape by joining four given points.

**Expected** Draw a 2D shape from a given point.

**Greater Depth** Draw a 2D shape using two given points presented in a different orientation.

Questions 2, 5 and 8 (Problem Solving)

**Developing** Draw a 2D shape within the outline of a given shape.

**Expected** Draw three of the same 2D shape that meet given criteria.

**Greater Depth** Draw three different 2D shapes that meet given criteria.

Questions 3, 6 and 9 (Reasoning)

**Developing** Explain whether a statement about the drawing of a 2D shape is correct or not by joining the dots given to draw the shape.

**Expected** Explain whether a statement about the drawing of a 2D shape is correct or not by adding extra dots and drawing the shape.

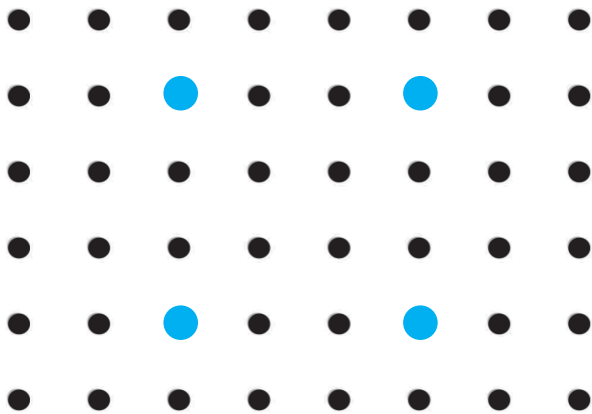
**Greater Depth** Explain whether a statement about the drawing of a 2D shape is correct or not by adding extra dots and drawing the shape. The shape is presented in a different orientation.

More [Year 2 Properties of Shape](#) resources.

Did you like this resource? Don't forget to [review](#) it on our website.

## Draw 2D Shapes

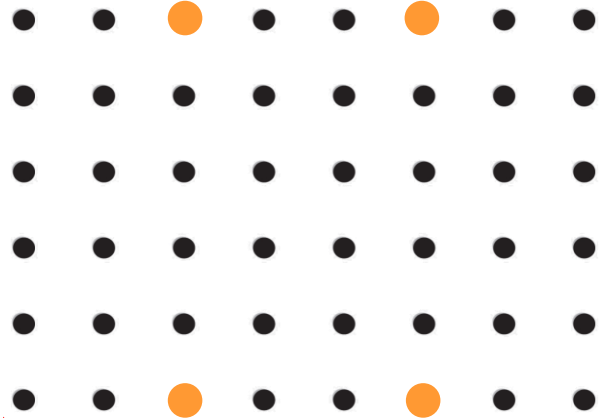
1a. Mandip is drawing a square. Connect the dots to finish her shape.



PS

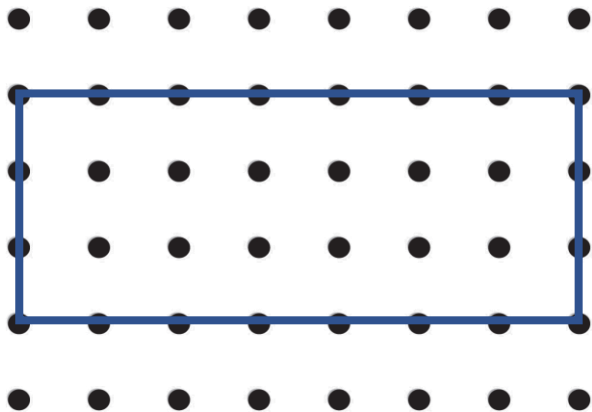
## Draw 2D Shapes

1b. Jack is drawing a rectangle. Connect the dots to finish his shape.



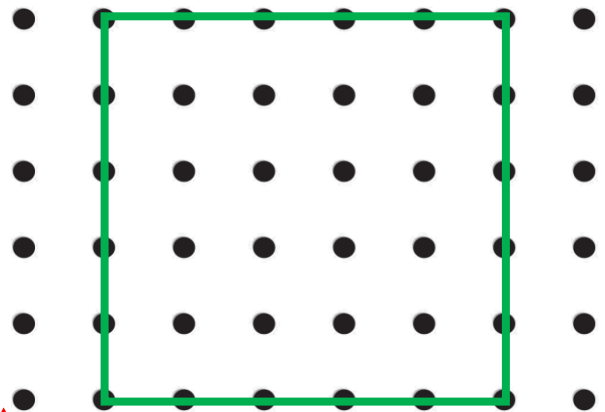
PS

2a. Draw another rectangle that fits inside the given rectangle.



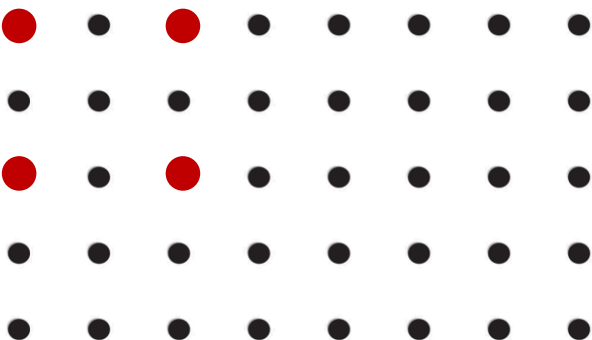
PS

2b. Draw another square that fits inside the given square.



PS

3a. Jakub says if he connects the dots he will draw a rectangle.

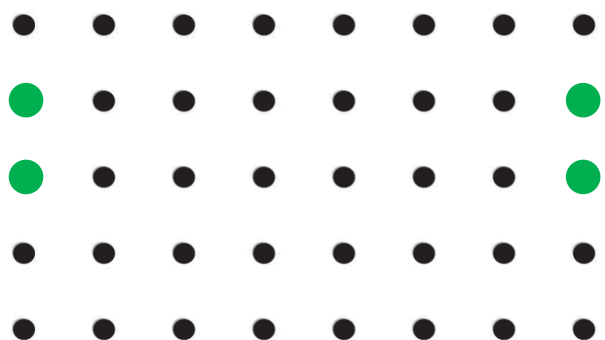


Is he correct? Prove it.



R

3b. Evie says if she connects the dots she will draw a rectangle.



Is she correct? Prove it.

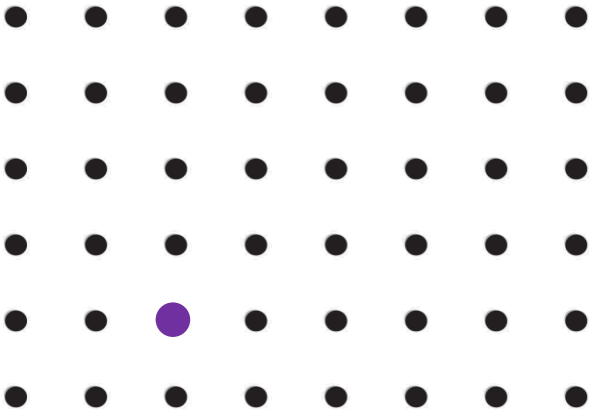


R

## Draw 2D Shapes

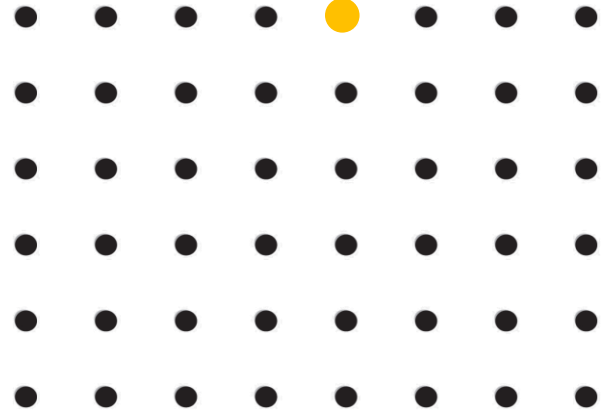
## Draw 2D Shapes

4a. Tosin is drawing a pentagon starting at the dot. What could his finished shape look like?



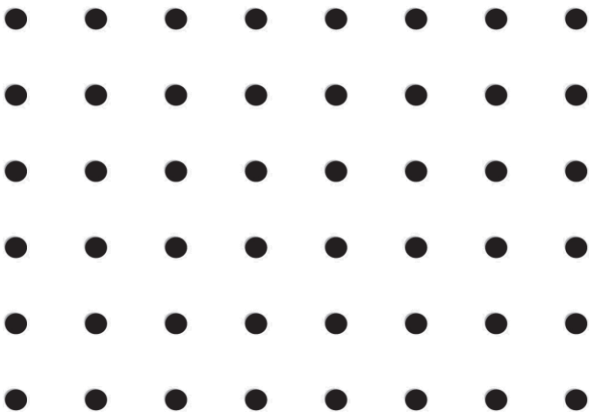
PS

4b. Lucy is drawing a hexagon starting at the dot. What could her finished shape look like?



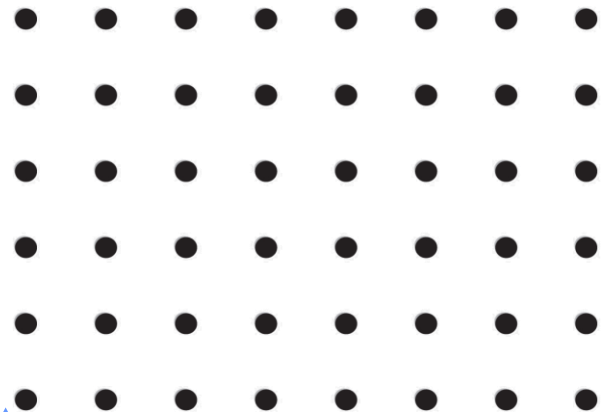
PS

5a. Draw 3 different sized rectangles that do not touch.



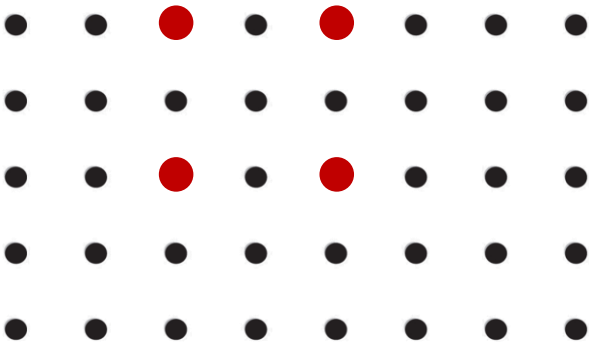
PS

5b. Draw 3 different sized triangles that do not touch.



PS

6a. Anna says if she adds 2 more dots she can draw a hexagon.

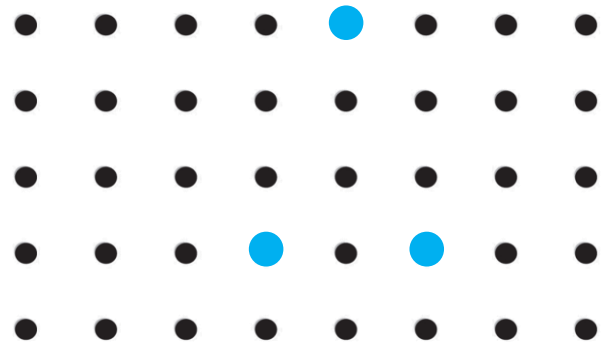


Is she correct? Prove it.



R

6b. Josh says if he adds 2 more dots he can draw a hexagon.



Is he correct? Prove it.

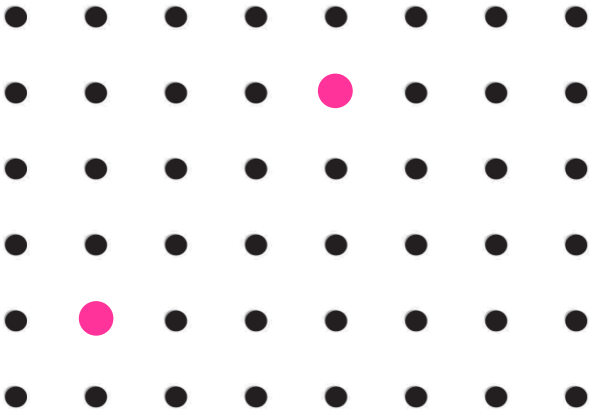


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## Draw 2D Shapes

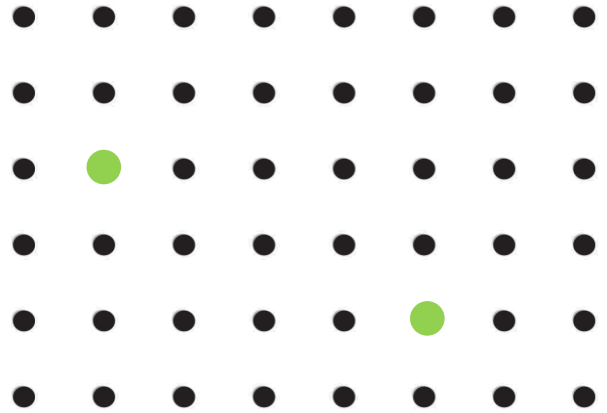
## Draw 2D Shapes

7a. Macie is drawing a pentagon. She has marked two of the vertices on the grid. What could her finished shape look like?



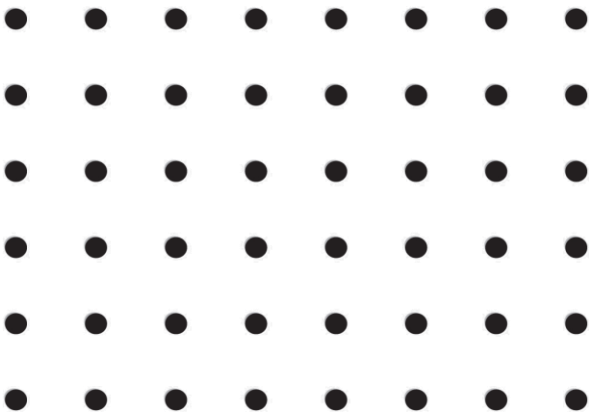
PS

7b. Ethan is drawing an octagon. He has marked two of the vertices on the grid. What could his finished shape look like?



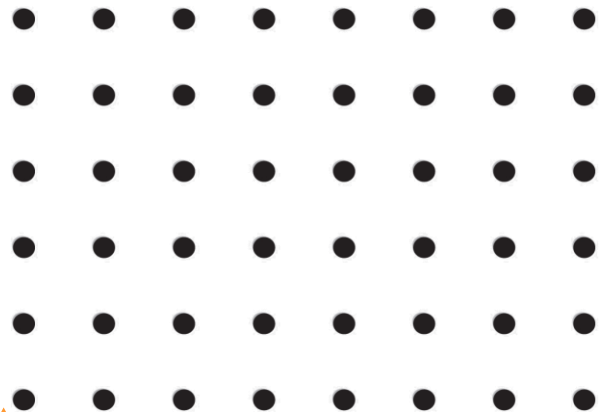
PS

8a. Draw a triangle, pentagon and rectangle, of different sizes, that do not touch.



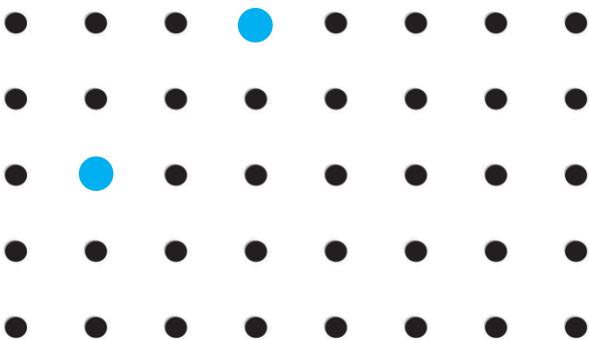
PS

8b. Draw a square, hexagon and pentagon, of different sizes, that overlap one other shape.



PS

9a. Kristian says if he adds 2 more dots he can draw a square.

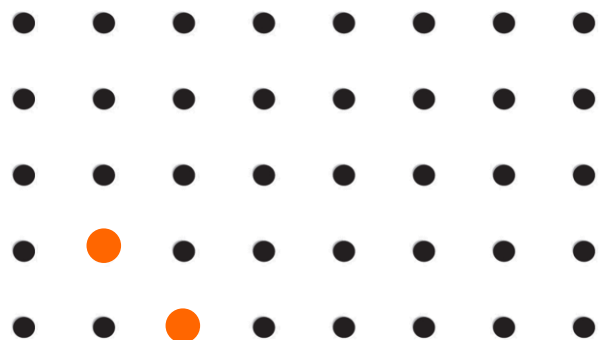


Is he correct? Prove it.



R

9b. Atifa says if she adds 3 more dots she can draw a rectangle.



Is she correct? Prove it.



R

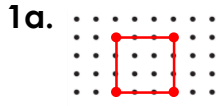
# Reasoning and Problem Solving

## Draw 2D Shapes

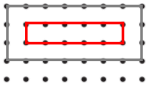
# Reasoning and Problem Solving

## Draw 2D Shapes

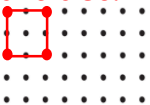
### Developing



2a. **Various answers, for example:**

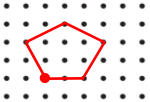


3a. **Jakub is incorrect. The shape is a square because it has 4 vertices and 4 equal sides.**

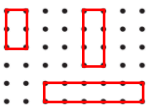


### Expected

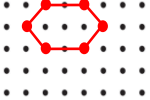
4a. **Various answers, for example:**



5a. **Various answers, for example:**

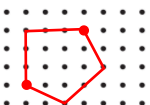


6a. **Anna is correct.**



### Greater Depth

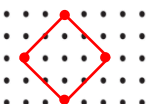
7a. **Various answers, for example:**



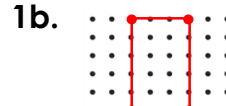
8a. **Various answers, for example:**



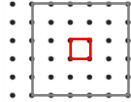
9a. **Kristian is correct.**



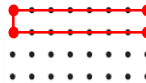
### Developing



2b. **Various answers, for example:**



3b. **Evie is correct.**



### Expected

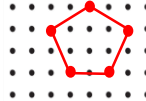
4b. **Various answers, for example:**



5b. **Various answers, for example:**



6b. **Josh is incorrect. Various answers, for example: Adding 2 more dots creates a shape with 5 vertices (pentagon).**

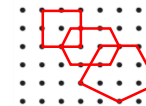


### Greater Depth

7b. **Various answers, for example:**



8b. **Various answers, for example:**



9b. **Atifa is incorrect. Various answers, for example: Adding 3 more dots would create a shape with 5 vertices (pentagon). A rectangle needs 4 dots (vertices) in total.**

