

Drawing a shape from a list of co-ordinates

CURRICULUM ALIGNMENT

SHA.SAL.4a

describe location on the full co-ordinate plane.

SHA.SHP.4a

construct 3-D and 2-D models or structures given defined measurements and/or specific conditions.

INTERACTIVES Coordinate Grid · challenge, display

WHAT THIS LESSON TEACHES

A shape is drawn from a list of co-ordinates by plotting every vertex first, then joining the points in the listed order and back to the start to close it. Always go across first for x, then up or down for y.

→ The rectangle (1, 1), (4, 1), (4, 3), (1, 3) has four vertices.

→ Joining A to B to C to D to A traces the outline once around.

MODEL THIS ON THE BOARD

KITE FOR A BOARD-GAME BOARD

- ① List the kite vertices in order: (3, 1), (5, 4), (3, 6), (1, 4).
- ② Plot every point first: go across then up for each pair and mark all four before any lines.
- ③ Join them in the given order: (3, 1) to (5, 4) to (3, 6) to (1, 4).
- ④ Join the last point back to the first to close the kite outline.

ANSWER KEY

Scaffold: visual check on the page

Q1: rectangle

Q2: yes

a) **Always** : Join each point to the next one on the list, then the last back to the first.

b) **Sometimes** : Correct order gives a clean shape but a crossed list such as (0, 0), (3, 0), (0, 3), (3, 3) crosses itself.

c) **Always** : Closing the outline is the drawing rule for every co-ordinate shape.

d) **Sometimes** : Four points can form a rectangle, kite, square or crossed figure depending on position and order.

EXTENSION SHEET · STRETCH ANSWERS

S1: 11 units

S2: 8 units

S3: 9 units

S4: 4 units