

2D shapes: naming and counting sides and corners

CURRICULUM ALIGNMENT

SHA.SHP.3a

investigate and analyse the properties of 3-D and 2-D shapes and identify classes of shapes based on these properties.

INTERACTIVES 2D Shape Inspector · challenge, display, explore

WHAT THIS LESSON TEACHES

A side is one of the straight edges that go around the outside of a flat shape. We count each side once as we go round, and corners are where two sides meet.

→ A triangle has 3 straight sides and 3 corners.

→ A square has 4 straight sides and 4 corners.

MODEL THIS ON THE BOARD

COUNTING SIDES AND CORNERS ON A CLASSROOM SHAPE

- 1 Look at the rectangle the teacher drew on the board.
- 2 Start at one corner and go all the way round, counting each straight side: **1, 2, 3, 4.**
- 3 Now count each corner where a pair of sides meets: **1, 2, 3, 4.**
- 4 The rectangle has 4 sides and 4 corners so it belongs to the four-sided family.

LESSON ARC

Open with an odd-one-out of four paper shapes on the IWB — most pupils pull the circle out for having no straight sides or corners, and that's the lens for the whole lesson. Tap round each shape aloud, numbering sides then corners, landing on the count-matches noticing and the circle's one curved edge. Pupils draw triangle, square and rectangle in their copy and label sides and corners. The Student Activity Book extends the counting to a wider set of shapes.

TEACHING MOVES

1. **Getting Started.** Display the four shapes and take three hands-up answers, not open call-outs. When a pupil picks the circle, revoice it as 'so you're looking at the sides and corners to decide' — that one phrase sets up everything that follows.
2. **Watch and Notice.** Tap each side then each corner one at a time as the on-screen number highlights, and after the triangle pause to say 'three sides, three corners — the count matches.' On the square and rectangle, stress the difference is side length, not number. Let the class say the circle's 'no straight sides, no corners' back to you in unison.
3. **Try It Together.** Send a pupil up to number each side and tap each corner, then name the shape, with the class calling the count back together. Watch for a pupil counting a corner as a side or skipping their starting side — prompt 'where did you begin? count that side once.' Use your paper shapes between turns so several pupils get to the board.
4. **Draw and Label in Your Copy.** Walk the room glancing at the counts beside each shape. Catch any pupil who has written different numbers for sides and corners on the same shape and send them back to recount round it.

5. **Class Challenge.** Run the four questions briskly — a pupil answers at the board, the class confirms, the board moves on. On the third, slowly turn a paper square onto its corner and ask 'did turning it change the number of sides?' before revealing the count. Push for 'zero' straight sides on the circle, never 'one'.
6. **What Did We Notice?.** Listen for pupils linking side-count to shape family. Revoice a strong answer: 'so even a brand-new shape, you count its sides and that tells you which family it belongs to.' Head off any claim that a tilted shape changes its name.

COMMON MISCONCEPTIONS

⚠ Pupils say the circle has 'one side' or 'one corner' — they treat the single curved edge as a straight side.

Hold a paper circle and a paper triangle side by side and run a finger round each. 'A side is straight and a corner is where two sides meet — find me one on the circle.' Land on zero straight sides, zero corners, one curved edge, and have the class say zero out loud.

⚠ Pupils count a corner as if it were a side, ending up with more counts than the shape has — e.g. saying a triangle has six.

Stop them at the board and split the job: 'first only the straight sides, number them one-two-three, now only the corners.' Tapping sides and corners in two separate passes stops the double-count.

⚠ Pupils think a square turned onto its corner has become a different shape or changed its number of sides.

Turn a paper square slowly in your hand and ask the class to keep counting the sides as it rotates. The count stays four — 'turning it never changes its sides, so it is still the same shape.'

DIFFERENTIATION

EMERGING

- Give pupils a paper shape to hold and run a finger round while they count, rather than counting only from the board.
- In the copy, let them count and label just the triangle and square before adding the rectangle.

DEVELOPING

- After the copy task, hand them a paper pentagon or hexagon and ask them to count its sides and corners and predict whether the two numbers will match.
- Ask them to draw two different four-sided shapes and explain what is the same and what is different about them.

PROFICIENT

- Pose at the board: 'could you draw a shape with four corners but five straight sides?' Let them try in the copy, fail, and explain why the corners always match the sides.
- Ask them to name the shape family for a shape with six straight sides and justify it to the class as if explaining to a younger pupil.

✂ **Cross-curricular:** Tie to Visual Arts — pupils spot the sides and corners in shapes around a building photo, such as windows on the GPO.

ANSWER KEY

Scaffold: visual check on the page

Q1: 3

Q2: 4

Q3: 0

Q4: circle

Spot: A triangle has the ****same**** number of corners as sides. 3 sides means ****3 corners****, not 4.

EXTENSION SHEET · STRETCH ANSWERS

S1: a regular hexagon

S2: a rectangle

S3: an isosceles triangle

Investigation: Classroom shape hunt — open-ended; scan pupils' working for valid solution paths rather than a single answer.