

Slide, flip and turn: moving shapes without changing them

CURRICULUM ALIGNMENT

SHA.TRN.2 understand that shapes and line segments can be reflected, rotated and translated.

INTERACTIVES Symmetry Tool · display

WHAT THIS LESSON TEACHES

A slide moves a shape to a new place without turning or flipping it. A flip turns it over like a pancake and a turn spins it round; the shape stays the same size and shape.

→ Slide a triangle 5 squares right; it still points the same way.

→ A half turn makes an up-pointing triangle point down.

MODEL THIS ON THE BOARD

HALF-TURN TRIANGLE

- 1 Start with a triangle pointing **up**.
- 2 Give it a half turn about its centre.
- 3 It now points **down**. Size and shape stay the same.

LESSON ARC

Open with the pancake image and hold the idea that the pancake is still itself after it lands facing the other way. Model slide, flip and turn once each on the visualiser with a large cut-out triangle, using the IWB symmetry mirror line for the flip. Pupils copy each named move at their desks with their own triangle, then draw a half turn in copy. Class Challenge is brisk desk practice ending on matching a ghost outline with one named move. Student Activity Book page 71 is the practice hand-off.

TEACHING MOVES

1. **Getting Started.** Show the pancake image as pupils settle. Take three hands-up answers, then pin the idea: still the same pancake — only the facing changed. That sentence is the lesson's anchor.
2. **Watch and Notice.** One large cut-out triangle on the visualiser for slide and turn; the board symmetry tool for flip. After each move, pause and ask 'same shape?' Cue lines: slide — same shape, new place; flip — faces the other way, like the pancake; half turn — points the opposite way. Name the move every time. If the IWB is down, flip over a ruler line on the desk.
3. **Try It Together.** Model each move once on the visualiser, then the whole class copies at desks — no board turns. Call one move at a time: slide to the star mark, flip over, half turn so it points down. Scan from the front and revoice: same shape, same size, same corners; only place or facing changed.
4. **Draw the half turn in your copy.** Pupils draw a triangle pointing up, then the same triangle after a half turn pointing down. Walk the room glancing for pointy-corner-up then pointy-corner-down. Whole-class copybook practice, not marking.
5. **Class Challenge.** Keep it brisk desk practice with you modelling on the visualiser. Call the four challenges in order. Before the ghost match, tape the second cut-out as a faint outline and say 'this is the target'. Accept slide, flip or turn if the pupil names the move correctly. Revoice any flip/turn mix-ups on the spot.

6. What Did We Notice?. Ask why it is still the same shape after a slide, flip or turn. Listen for same sides, same corners, same size. Revoice: place or facing can change; the shape itself does not. Keep flip and turn distinct — flip faces the other way; a half turn points the opposite way.

COMMON MISCONCEPTIONS

⚠ Pupils treat a flipped triangle and a turned triangle as the same move — they spin it on the spot when you said flip, or flip it over when you said turn.

Freeze the class. Hold the large triangle: flip goes over the mirror line so it faces the other way (pancake); turn spins on the spot so it points a new way. Do one of each slowly and have the class name which is which before restarting.

⚠ After a half turn, pupils say 'it's a different shape now' because it points down instead of up.

Lay the before and after triangles side by side. Count sides and corners together. Revoice: same shape, same size — only the pointing changed.

⚠ On a slide, pupils rotate the triangle as they move it, so the pointing changes when only the place should.

Cue 'same shape, new place — no spinning'. Model the slide again with a finger on one corner so that corner keeps the same direction the whole way across.

DIFFERENTIATION

EMERGING

- Call only slide and half turn first; add flip once those two are steady. Stay beside pupils who lose the facing on a flip and model over the ruler line once more.
- On the copybook half-turn, pre-draw the 'pointing up' triangle so the pupil only draws the pointing-down partner.

DEVELOPING

- After the ghost match, ask: name one move that would NOT land on the ghost — and show why with the cut-out.
- On the copybook page, add a second pair: draw the triangle after a quarter turn so it points sideways, and label it.

PROFICIENT

- Challenge: reach the ghost outline in exactly two named moves instead of one, and say both names in order.
- Ask: can a slide ever change which way the triangle points? Prove it with the cut-out, then write one sentence in copy.

✂ **Cross-curricular:** Link to PE — pupils slide, half-turn and flip a bib or beanbag on the yard and name the move before the next relay leg.

ANSWER KEY

a) The same shape, 2 squares further right.

b) The same shape, upside down.

c) The same shape, facing the other way.

Q1: slide

a) Always : By definition a slide only changes place, not facing or orientation.

b) Always : Up becomes down and left becomes right.

c) Never : A flip only turns the shape over; size and shape stay the same.

d) Never : A turn always spins the shape about a point.

EXTENSION SHEET · STRETCH ANSWERS

S1: slide

S2: flip

S3: down

S4: yes

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