

Classifying angles: acute, right, obtuse and straight

CURRICULUM ALIGNMENT

SHA.SAL.3b

compare and classify angles, recognising them as a property of a shape and as a description of a turn.

INTERACTIVES

Angle Tool · display, explore

Drag Sort · challenge

WHAT THIS LESSON TEACHES

An angle is the amount of turn between two lines that meet at a point. A right angle is a square corner (a quarter turn). An acute angle is smaller than a right angle, an obtuse angle is bigger than a right angle but not flat, and a straight angle is a flat line (a half turn).

- The narrow opening of scissors just starting to open is an acute angle.
- A clock hand from 12 down to 6 makes a straight angle.

MODEL THIS ON THE BOARD

CLASSIFYING A CLOCK ANGLE

- 1 The minute hand points to **12** and the hour hand points to **3**.
- 2 Compare the opening between the hands to a square corner.
- 3 The hands make an exact square corner, so this is a **right angle**.



DISCUSSION STARTER

REFLECT

Does checking against a right angle make acute and obtuse angles easier to name?

LESSON ARC

Open with two clock positions on the IWB — hands at a square corner, then hands opened flat to a straight line — and draw out the idea of a half turn. Model the four groups by holding the paper right-angle checker against each angle live. Pupils sort cards together at the board, then draw and label one of each in their copybook. In the Class Challenge they build each angle with joined card strips, ending on the full-open straight line.

TEACHING MOVES

1. **Getting Started.** Put the two clocks up as pupils settle and take three hands-up answers, not call-outs. You're fishing for 'half turn' — if a pupil says 'it went halfway round', repeat it back and park it for the wrap step rather than resolving it now.
2. **Watch and Notice.** Hold the paper right-angle checker against each named group in turn so the class watches the square-corner test happen live: too big to fit means acute, fits exactly means right, room to spare means obtuse. Ask 'how many right angles could fit here?' on the straight angle but leave it hanging for the wrap.

3. **Try It Together.** Talk it through, no marking. Each pupil holds the checker against the card before dragging, and the class agrees or corrects out loud before it lands. Watch for the flat line getting called 'obtuse' — head it off with 'an obtuse angle still has a bend; a straight angle has none'.
4. **Draw One of Each in Your Copy.** Walk the room glancing for all four labels and the small square mark inside the right angle. The one to catch is a straight angle drawn with a slight bend — remind that pupil it must be one flat line.
5. **Class Challenge.** Keep the board work brisk — pupils open their joined strips a little, to a right angle, wider, then fully, checking each against the square corner as they go. Linger only on the last move: hold the fully-opened strips up so the class sees the two arms form a single line with no bend.
6. **What Did We Notice?.** Listen for 'a right angle is a quarter turn, so two make a half turn'. Revoice a strong answer, then hold two paper right-angle checkers edge to edge so the class watches the flat line appear.

COMMON MISCONCEPTIONS

- ⚠ Pupils call the straight angle 'obtuse' — to them it just looks like a very wide corner. Stop and stress the test: an obtuse angle still has a bend in the arms, a straight angle has no bend at all. Open the joined card strips fully so the class sees the two arms make one line, then compare to a genuinely obtuse opening beside it.
- ⚠ Pupils draw the straight angle with a slight kink in the middle instead of one flat line, so it isn't really straight. During the copybook draw, hand them the copybook corner as a straightedge — the top edge of the page is a ready-made straight line to trace along. No kink allowed.
- ⚠ Pupils eyeball an angle as 'right' when it's actually a bit under or over a quarter turn. Insist the paper right-angle checker touches the angle every time — no eyeballing. If the square corner leaves a gap it's acute; if it overshoots it's obtuse; only an exact fit earns the square mark.

DIFFERENTIATION

EMERGING

- Keep these pupils on the acute-right-obtuse three-way sort first; add the straight angle only once the square-corner test is secure for them.
- Give the checker itself as the label prompt — 'checker too big, checker fits, checker with room to spare' — before naming the words acute, right, obtuse.

DEVELOPING

- After the copybook draw, ask them to sketch an angle that's only just acute and one that's only just obtuse, both right beside a right angle, and justify each label.
- Pose: using the joined strips, can you open to an angle exactly between a right angle and a straight angle? How would you check?

PROFICIENT

- Narrate a stretch at the board: if a straight angle is two right angles, how many right angles make a full turn all the way round? Have them reason it from the strips.
- Pull them ahead into the Student Activity Book and ask them to hunt the classroom for one real acute, right, obtuse and straight angle, naming why each fits.

✂ **Cross-curricular:** Tie to Geography — pupils name the angle a compass needle turns through from North to East (right angle) and North to South (straight angle).

ANSWER KEY

- a) smaller than a right angle, is not a half turn
- b) exactly a right angle, is not a half turn
- c) bigger than a right angle, is not a half turn

Q1: straight

Q2: obtuse

a) **Always** : By definition an acute angle is less than a quarter turn.

b) **Always** : An obtuse angle is always greater than a square corner but less than a straight line.

c) **Never** : An acute angle is far smaller than a flat half turn.

d) Sometimes : It is a right angle only at certain times, like 3 o'clock, not always.

EXTENSION SHEET · STRETCH ANSWERS

S1: 47° is acute

S2: 161° is obtuse

S3: 158° is obtuse

S4: 132° is obtuse

S5: 17° is acute