

Chance: certain, possible and impossible

CURRICULUM ALIGNMENT

DAT.CHN.3 describe and test predictability and (un)certainty in events.

INTERACTIVES Probability Spinner · display, explore

WHAT THIS LESSON TEACHES

Events are certain if they are sure to happen, possible if they might happen, and impossible if they can never happen.

- The next day of the week will have a name is certain.
- It rains during lunch break is possible.
- Sunday comes straight after Wednesday is impossible.

MODEL THIS ON THE BOARD

SORTING A SUNSET EVENT

- 1 Read the event: will the sun set this evening?
- 2 Ask if there is any way it can fail to happen in any weather or season.
- 3 The sun always sets each evening so the event is certain.
- 4 Label it certain and say why out loud.

DISCUSSION STARTER

REFLECT Can you name one certain, one possible and one impossible event from your day?

LESSON ARC

Open with three hands-up questions to surface the sure / might / never feel before naming it. Put the two spinners up — the all-red one draws out 'certain' and 'impossible', the two-colour one forces the shift to 'possible'. Pupils write their own three events under headings in copy. Try It Together resets the spinner three ways; the Class Challenge sorts four event cards, closing on the snow-in-Cork card that separates unlikely from impossible.

TEACHING MOVES

1. **Getting Started.** Take hands-up for each question, not call-outs — you're listening for the three different feels (sure, might, never) without naming them yet. Revoice one strong answer: 'so that one is sure to happen every single day.'
2. **Watch and Notice.** Point at the all-red spinner interactive and ask what colour it is sure to land on, then whether it could ever land on blue — draw 'certain' and 'impossible' out of the class before naming them. On the two-colour spinner, hold out for the shift: red is now only possible, and blue could still turn up so it is not impossible, just not guaranteed.
3. **Write Your Three Events in Your Copy.** Walk the room glancing at whether each event fits its heading — no marking. The one to catch is a very unlikely event parked under impossible; nudge with 'could it ever happen, even once?'
4. **Try It Together.** A pupil resets the spinner interactive three ways while the class predicts first. Before anything moves, ask the room 'how many parts must be red for it to be certain?' and take a turn-and-

name. Listen for pupils justifying by the amount of colour, not guessing; revoice 'because every part is red, there is no other way it can land.'

5. **Class Challenge.** Brisk practice — one pupil places each card, the class confirms the group with a hands-up, move on. The first three sort cleanly; hold the snow-in-Cork card for the close and let the class argue whether it's impossible or just very unlikely before settling it under possible.
6. **What Did We Notice?.** Display-only talk. Listen for pupils naming the test — impossible means can never happen, not even once. Revoice: 'so snow in July has happened somewhere before, which means it is possible, just rare.'

COMMON MISCONCEPTIONS

⚠ A pupil says snow in Cork in July is impossible — treating 'almost never happens' as the same as 'can never happen'.

Ask the class: has it ever snowed in July anywhere, even once? Line the snow card up beside the pig-flies-to-school card — one has happened somewhere, one never can. That gap is the whole lesson; let them argue it and settle snow under possible.

⚠ On the two-colour spinner, a pupil calls landing on blue 'impossible' because red covers more of the wheel.

Spin it a few times until blue turns up, then ask: if it just landed on blue, can it be impossible? Rename it together — blue is possible, just less of the wheel than red.

DIFFERENTIATION

EMERGING

- Give these pupils the all-red spinner questions first — 'sure' and 'never' are the clearest cases before the possible middle muddies it.
- For the copy headings, offer them a starter event to place (e.g. 'the sun sets tonight') so they sort one before inventing their own.

DEVELOPING

- After the card sort, ask them to invent one event that is genuinely borderline and challenge the class to place it.
- On the possible spinner, ask them to change it so red is possible but far more likely than blue — same word, different balance.

PROFICIENT

- Pose: name an event that feels impossible but actually is possible, and one that feels certain but is only possible. Have them write both in copy with a one-line reason each — this pushes the unlikely-versus-impossible test into their own examples.

✓ **Cross-curricular:** Tie to Geography — check the real weather for Cork in July and ask whether that record makes summer snow impossible or just very rare.

ANSWER KEY

Scaffold: visual check on the page

Q1: certain

Q2: possible

Q3: impossible

Q4: certain

a) Always : That matches the meaning of certain in this lesson.

b) Never : Possible means it might happen, not that it must.

c) Always : No other result can appear so it is sure.

d) Sometimes : It depends on the clouds and forecast that day.

EXTENSION SHEET · STRETCH ANSWERS

S1: unlikely

S2: even

S3: unlikely

S4: unlikely

S5: unlikely