Probability and Chance

How likely is it?

WHAT IS IT?

Probability measures how likely something is, from 0 (impossible) to 1 (certain). You work it out by comparing the outcomes you want with all the outcomes that can happen.



P(rolling a 5) = 1 / 6
wanted ÷ all possible

THE BIG IDEAS

1. Probability = wanted outcomes ÷ all possible outcomes.
2. Every probability is between 0 and 1, or 0% and 100%.
3. Independent events multiply: two heads in a row is 1/2 × 1/2 = 1/4.
4. A fair coin has no memory: each flip is still 50-50.

YOU SEE IT WHEN ...

- A weather forecast with a 30% chance of rain
- Rolling dice or drawing cards in a board game
- Checking quality in a factory

WORDS YOU WILL MEET

Outcome
one possible result

Event
the outcomes we care about

Sample space
the list of all possible outcomes

Independent
one result does not change the other

Expected value
the average result over many tries

Odds
compares chances for and against

GOOD TO KNOW FIRST

Fractions, decimals and percentages.

IN YOUR COURSE YOU WILL ...

- List outcomes and find simple probabilities
- Combine events with AND and OR
- Use tree diagrams and tables
- Find expected values and run simulations

Start tip: List every possible outcome first, then count the ones you want.

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