

Probability

M2 Understand and use conditional probability, including the use of tree diagrams, Venn diagrams, two-way tables.

Understand and use the conditional probability formula $P(A|B) = \frac{P(A \cap B)}{P(B)}$.

M3 Modelling with probability, including critiquing assumptions made and the likely effect of more realistic assumptions.

For a brief commentary on this content go to the [MEI outline SoW](#).

Pre-requisites

- AS Probability: Understand all aspects.
- 'Warm up' activities from Nrich involving modelling: [The Dog ate my homework](#), [Louis' Café](#).

Teaching it!

- A series of [videos](#) designed to support students with this topic.
- [Huge Venn diagram](#): Introducing the ideas of conditional probability through a Venn diagram.
- [Put out](#): An activity using tree diagrams from Nrich.
- [Rain or shine](#) & [Drug Testing](#): Two conditional probability activities from Nrich.
- [Conditional probabilities & independence](#): Questions generated in a GeoGebra applet.
- [Random Independence](#): A Making Stats Vital task using venn diagrams & conditional probability to prove independence.
- [The Parker Machine: it's 80% accurate](#): A video clip excerpt from RI Christmas lectures on accuracy of testing.

Common student errors

- The formula for $P(A|B)$ is used with denominator $P(A)$ rather than $P(B)$.
- Being able to generate correct Venn diagrams from given information.
- Making an inappropriate choice of method; e.g. using fractions rather than combinations.

Getting them thinking

- How can you tell events are independent from a tree diagram? From a Venn Diagram? From a two-way table? Which representation makes it easier to see independent events?
- If A and B are independent can you prove that A' and B' are also independent?