Title: Probability

Key Knowledge/Prior Learning KS2/3 and Retrieval and Suggested Starters
- Write as fractions   - Simplify fractions   - Calculations with fractions   - Calculations with decimals   - Convert between fractions, decimal and percentages

KS3 National Curriculum – what students will be practicing and key questions
- Write probability as words and number   - Calculate relative frequency   - Probabilities adding to 1   - Calculate expected number of outcomes   - Complete frequency trees/two-way tables   - Probability from frequency trees/two-way tables   - Complete a Venn diagram   - Probability from a Venn diagram   - And/or probability rules   - Probability from unconditional tree diagram   - Probability from conditional tree diagram

Specific Ambitious Knowledge
- Set notation   - Worded tree diagrams   - Probability with algebra

Key Vocabulary/Literacy Opportunities
- Unlikely, likely, even change certain, impossible   - Mutually exclusive   - Probability   - Conditional   - Unconditional

Key Formulae/Knowledge

Complement Rule

$$P(A) = 1 - P(A^c)$$

Addition Rule for Mutually Exclusive Events

$$P(A \text{ or } B) = P(A) + P(B)$$

Multiplication Rule for Independent Events

$$P(A \text{ and } B) = P(A) * P(B)$$

"At Least One" Rule

$$P(\text{At least one}) = 1 - P(\text{none})$$

p(A) - probability of event A happening

p(B) - probability of even B happening

p(A') - probability of event A not happening

p(B') - probability of event B not happening

p(A∩B) - probability of A and B happening

p(A∪B) - probability of A or B happening

$$\text{Expected outcomes} = \text{Probability} \times \text{number of trials}$$

Maths in Context (Historical, Real Life and Student Thinking Points)
• Do you have a higher probability of winning the lottery if you buy more tickets?

Projects/Enrichment/Investigations
• Probability of winning the lottery
• Fair's fair https://nrich.maths.org/14102