



Spring Learning Journey for Maths

Year 8H Unit 7 Probability

How does this unit link to prior learning?

- Moving from using words to describe probabilities to using fractions.
- Understanding the similarities and differences between Expected probability and relative frequency.

Prior Knowledge Check

- **The Probability Scale:** Understanding that probability is a numerical value between 0 (impossible) and 1 (certain).
- **Single Event Probability:** Calculating the probability of a single event using the formula:

$$\frac{\text{Number of successful Outcomes}}{\text{Total number of possible outcomes}}$$
- **Mutually Exclusive Events:** Knowing that the sum of probabilities for all possible mutually exclusive outcomes is exactly 1.
- **Fractions, Decimals, and Percentages (FDP):** Ability to convert between these forms interchangeably (e.g. 0.25, $\frac{1}{4}$, 25%).
- **Fraction Arithmetic:** Adding and multiplying fractions is critical for combining probabilities of multiple events.

What will you be learning about?

Be able to calculate probability relating to independent and mutually exclusive events.

Know the difference between theoretical and experimental probabilities.

Use tree diagrams to calculate repeated events.

We will develop our learning each week by focusing on:

1. Calculate and compare probabilities	RAG	2. Decide if a game is fair	RAG
3. Identify mutually exclusive outcomes and events. Find the probabilities of mutually exclusive outcomes and events 1.		4. Find the probabilities of mutually exclusive outcomes and 2 events.	
5. Calculate the relative frequency of a value. Use relative frequency to make estimates. Find the probability of an event not happening.		6. Use relative frequency to estimate the probability of an event. Use estimated probability to calculate expected frequencies.	
7. Consolidation		8. Work out the expected results when an experiment is repeated.	
9. Carry out a probability experiment. Estimate probability using data from an experiment		10. List all the possible outcomes of one or two events in sample space diagrams or organised lists.	

11. List all the possible outcomes of one or two events in Venn diagrams.			12. List all the possible outcomes of one or two events in Tree Diagrams diagrams			
13. Revision			14. Assessment			
15. Feedback						
Key vocabulary						
<i>Independent,</i>	<i>theoretical,</i>	<i>mutually exclusive,</i>	<i>experimental,</i>	<i>bias,</i>	<i>outcomes,</i>	<i>impossible,</i> <i>likely,</i> <i>unlikely,</i> <i>even chance,</i>

How will this help you in the future?	
KS4	Beyond LHS
<p><i>Most Year 8 concepts are directly assessed at GCSE, but with increased complexity:</i></p> <ul style="list-style-type: none"> • Venn Diagrams: Simple sets in Year 8 become tools for conditional probability at GCSE (e.g., finding $(A B)$) • Tree Diagrams: Year 8 introduces basic independent events (e.g., flipping two coins). GCSE extends this to dependent events (e.g., taking two sweets from a bag without replacement), which often involve solving quadratic equations 	<p><i>Year 8 probability isn't just about rolling dice; it is the foundation for probabilistic thinking, a "superpower" for navigating an unpredictable world. Beyond the classroom, these skills help you manage risk, make smarter financial choices, and even improve your personal relationships</i></p> <ul style="list-style-type: none"> • Risk Management: Understanding probability helps you weigh the "expected value" of a choice rather than just going with your gut. This is vital for deciding whether to take a new job, start a business, or invest in stocks. • Insurance & Personal Finance: Knowledge of risk helps you understand why insurance premiums vary and how to plan for long-term goals like retirement by modelling how long your savings might last. • Career Growth: Proficiency in probability is increasingly essential for high-paying roles in AI, data science, and marketing, where algorithms use these principles to predict consumer behaviour