 **LPS Mathematics: Year 8 Unit 8 –** **Introduction to Probability**

**Enquiry Question:** **In a class of 30, what is the probability that 2 of you will share the same birthday?**

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| **Key Topics and Learning Sequence**  |
| **= First Steps** |  **= Moving On** |  **= Stretch** |  **= Challenge** |
| **1. The likelihood Scale**1. Define the **outcome** of events using the terms **impossible, unlikely, equal, likely, and certain**.
2. Know that all probabilities lie between 0 and 1.
3. Order events based on their **likelihood.**
4. Order events on a **number line** based on their probability.
5. **Assign** a **numerical** value to a probability.
 | **2. Calculating Probabilities**a) Calculate simple probabilities with a coin, die or spinner.  b) Know and use the idea that all probability sums to 1. c) Use the correct **notation** to describe the probability of an **event** happening. d) Calculate **simple** probabilities with multiple coins, dice, or spinners.  e) Use **fractions**, **decimals** and or **percentages** to describe the probability of any event. f) Solve problems in context.  | **3. Listing Outcomes** a) List all the **possibilities** and use this to calculate the probability of an event. b) List all the possibilities in a sample space and use this to calculate the **theoretical probability** of an event. c) List all the **combinations** of something occurring and use this to work out the probability.  | **4. Frequency Trees**1. Draw a **frequency tree** diagram.
2. Interpret **frequency tree** diagrams.
3. Use a frequency tree to calculate the probability of an event happening.
4. Draw, complete and interpret **frequency tree** diagrams which involve ratios, percentages and decimals in context.
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| **How does this unit fit into your mathematical learning journey?** | **Further Exploration, Enrichment and Cultural Capital** |
| This unit of work introduces the concepts of probability after building on data collection **first learned in primary school and in Year 7.** This unit not only builds upon the concepts of **percent** and **ratio** which you met earlier in **Year 7** and this year in **Year 8** but will be used with **relative frequency** during yoursecondary mathematical education at Langdon Park School. You will develop this further in **probability** units in **Year 9.** | **Reading: Read about the Monty Hall Problem** <https://betterexplained.com/articles/understanding-the-monty-hall-problem/>**Enrichment:** Watch the following video from Numberphile: <https://www.youtube.com/watch?v=U7f8j3mVMbc>**Cultural Capital:** Visit the Science Museum and go see the Atmosphere exhibition. What are the odds on being struck by lightning?  |

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**Date: Initial Thoughts:**

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**Date: New Thoughts:**

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**Date: Final Thoughts:**

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