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| **Key Topics and Learning Sequence** | | | | | | | |
| **= First Steps** | | **= Moving On** | | **= Stretch** | | **= Challenge** | |
| **1. Logic**   1. Use diagrams to help visualise problems 2. Use logic to test hypotheses 3. Create logical arguments to prove an hypothesis | **2. Number and proof**   1. Identify the type of number indicated by an algebraic expression 2. Show the parity of solutions (whether a solution will be odd or even) 3. Use prime factorisation to find lowest common multiples and highest common factors of sets of numbers 4. Apply knowledge of LCM and HCF in context | | **3. Expressions and proof**   1. **Defining** and **proving** basic number properties with algebra (odd, even, square, cube etc) 2. Disprove by **counter example** 3. Proof by **exhaustion** by considering odd and even case separately 4. Proving **statements** about mathematical expressions | | **4. Equations and proof**   1. **Solve** linear equations with the **unknown on one side** 2. **Solve** linear equation**s** with the **unknown on both sides** 3. Solvelinear equations involving **fractions, powers and roots** 4. **Forming** linear equations from contexts such as geometry and worded problems | | **5. Geometry and proof**   1. Use **axioms** to prove further angle facts 2. Use **algebra** to prove circle theorems |
| **How does this unit fit into your mathematical learning journey?** | | | | **Further Exploration, Enrichment and Cultural Capital** | | | |
| This unit brings together ideas from number and algebra so you will see how they are connected. Previously, number skills and algebra skills were covered independently and so this will allow you to see how ideas in maths fit together. It will also help you to think mathematically and will expose you to important mathematical arguments. | | | | **Reading: The origins of proof: https://plus.maths.org/content/origins-proof**  **Enrichment: Explore visual proofs of Pythagoras’ Theorem**  **Cultural Capital:**  **Explore the use of straight edge and compass to create Islamic tiling patterns** | | | |

**LPS Mathematics: Year 10 - Unit 1 Proof**

**Enquiry Question:** “**How do we know in maths?”**

**Enquiry Question:** “How do we *know* when something is true in maths?”

**Date: Initial Thoughts:**

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**Date: New Thoughts:**

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**Date: Final Thoughts:**

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