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| **Key Topics and Learning Sequence** | | | | | |
| **= First Steps** | **= Moving On** | | **= Stretch** | | **= Challenge** |
| **1. 2D Cartesian coordinate system**   1. Plot a **coordinate** correctly in any quadrant 2. Label the **axes** 3. Find the **midpoint** between two given points in a coordinate system 4. Find the **distance** between 2 given points in a coordinate system   Solve problems involving **shapes and coordinates** | **2 Functions and graphs**   1. Find an **output** with a given **input** 2. Find an **input** given an output 3. Use and apply **function notation** 4. Understand a **mapping diagram**   Understand what a **graph** is and how it relates to functions and mappings | **3. Linear functions, graphs and gradient**   1. Understand what a linear function is and that their graphs form a **straight line** 2. Understand what **gradient** is and how to find it from a graph 3. Understand what a **y-intercept** is and how to find it from a graph 4. Understand that **parallel lines** will have the same gradient | | **4. Equation of a straight line graph**   1. Understand the algebraic equations of **vertical and horizontal lines,** including the coordinate axes 2. Understand the **algebraic representation** of gradient and intercept– y=mx+c 3. Know how to use **a table of values** to plot straight line graphs 4. Understand and be able to **sketch and plot graphs** such as x+y=k for any constant k 5. Understand how gradient is related to graphical representations of families of **equivalent ratios**   Understand how **graphically** to find the solution of **two linear simultaneous equations** | |
| **How does this unit fit into your mathematical learning journey?** | | | **Further Exploration, Enrichment and Cultural Capital** | | |
| This unit introduces you to some new ideas about the **proportional relationship** between two variables. You first meet **proportion** in **Year 7** and build on this in **Year 8.** This unit shows how **graphs can represent** these relationships and then this is taken further in **Year 10.** | | | **Reading:**  **Enrichment:** **Explored straight lines in art**   * + - 1. Explore the artists Barbara Hepworth and Naum Gabo and find pieces of their artwork which **create curves using straight lines.**       2. Create your own **piece of artwork** es to   **Cultural Capital:** Visit your local go karting centre and work out the graphical representation of your journey around the track. | | |

**LPS Mathematics: Year 9 Unit 7 – Graphs and Linear Function Enquiry Question: Is a graph a picture?**

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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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