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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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