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| **Key Topics and Learning Sequence** | | | | | |
| **= First Steps** | **= Moving On** | | **= Stretch** | | **= Challenge** |
| **1. Parts of a circle**   1. Identify a **diameter, radius and circumference** 2. Identify a **chord** and **tangent** 3. Identify a **sector** and **segment** (minor and major) 4. Use a pair of compasses to accurately draw a circle | **2. Pi (π)**   1. Understand **pi** as a ratio between 3 and 4 2. Understand pi is an **irrational number** 3. Know how to leave an answer in terms of pi (throughout) | **3. Circumference**   1. Know the two formulae to work out the **circumference** of a circle 2. Find the circumference of a circle, given the radius or diameter 3. Work out the radius or diameter, given the circumference 4. Work out the perimeter of a semicircle/ sector of a circle 5. Work out the **perimeter** of **compound shapes** | | **4. Area**   1. Know the formula to work out the **area** of a circle 2. Find the area of a circle, given the radius or diameter 3. Work out the radius or diameter, given the area 4. Work out the area of a semicircle/sector of a circle 5. Work out the **area** of **compound shapes**   **INCLUDE CHALLENGE : FORMING EXPRESSIONS? WITH PI?** | |
| **How does this unit fit into your mathematical learning journey?** | | | **Further Exploration, Enrichment and Cultural Capital** | | |
| This unit builds on ideas about **area and perimeter of shapes** and **ratios** you first meet in **Year 8** in addition to **similarity** which you meet earlier this year in **Year 9.** The unit will explore the geometrical properties of circles, investigate a famous natural ratio, construct circles using geometrical equipment and use that new knowledge to understand how to find the area and perimeter of a circle and apply in context. **In year 10**, we then build on circles further and apply these ideas to understand their link to creating **geometrical constructions** such as **perpendicular bisectors.** | | | **Reading: INCLUDE READING**  **Enrichment:** -  a. Create a piece of artwork with just a pair of compasses and a ruler.  b. Construct a regular hexagon or a dodecagon using a pair of compasses and a straight edge.  **Cultural Capital:**  Visit the Science Museum in Kensington and see some real-life constructions. | | |

**LPS Mathematics: Year 9 - Unit 5 Circles**

**Enquiry Question:** “Were the Ancient Greeks correct when they believed that the circle was the perfect shape?”

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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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