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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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