 **LPS Mathematics: Year 8 Unit 7 – Standard Form**

 **Enquiry Question:** **How many times are you bigger compared to an atom?**

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| **Key Topics and Learning Sequence**  |
| **= First Steps** |  **= Moving On** |  **= Stretch** |  **= Challenge** |
| **1. Powers of Ten**1. Can you write a power of ten using **index form**
2. Use **place value** to multiply a number by $10^{n} n\geq 0$
3. Use **place value** to multiply a number by $10^{n} n<0$
4. Use a calculator to find powers of ten.
 | **2. Standard Form**1. Can **estimate** an appropriate length in standard form
2. Know when a large number or small number is written in standard form
3. **Convert** between ordinary numbers and standard form for numbers **greater than 1**
4. **Convert** between ordinary numbers and standard form for numbers **less than 1**
5. Use your calculator to solve problems with standard form.
 | **3. Arithmetic with Standard Form**1. Can **multiply** and **divide** in standard form when **no adjustments is needed**
2. Can **add** and **subtract** in standard form
3. Can **multiply and divide** when **adjustment is needed**
4. Can **multiply and divide** when an adjustment is required and there are **negative powers**
 | **4. Standard Form in Context**1. Find **perimeter** of shapes with measurements in standard form
2. Find **area** of shapes with measurements in standard form
3. **Substitute numbers** in standard form into algebraic expressions and equations
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| **How does this unit fit into your mathematical learning journey?** | **Further Exploration, Enrichment and Cultural Capital** |
| In **year 7** you explore different types of numbers, including **integers** and **rational numbers**. You also go on to learn about **powers of ten** in the **indices and roots** unit earlier **this year**. This builds on both of those units and you explore more practical ways to solve mathematical problems with **large and small numbers.** These are then applied to many further units throughout your mathematical journey at LPS. | **Reading/viewing: The True size of the universe** [**https://www.youtube.com/watch?v=gIbfYsQfNWs**](https://www.youtube.com/watch?v=gIbfYsQfNWs)**Enrichment:** Explore the applet “The scale of the Universe 2“ <http://htwins.net/scale2/>Matching Activity : <https://nrich.maths.org/14530>**Cultural Capital:** You can visit the National History Museum, check all the solar system and write their diameter and circumference in standard form.  |

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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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