



# The 6 W's of Scientific Notation

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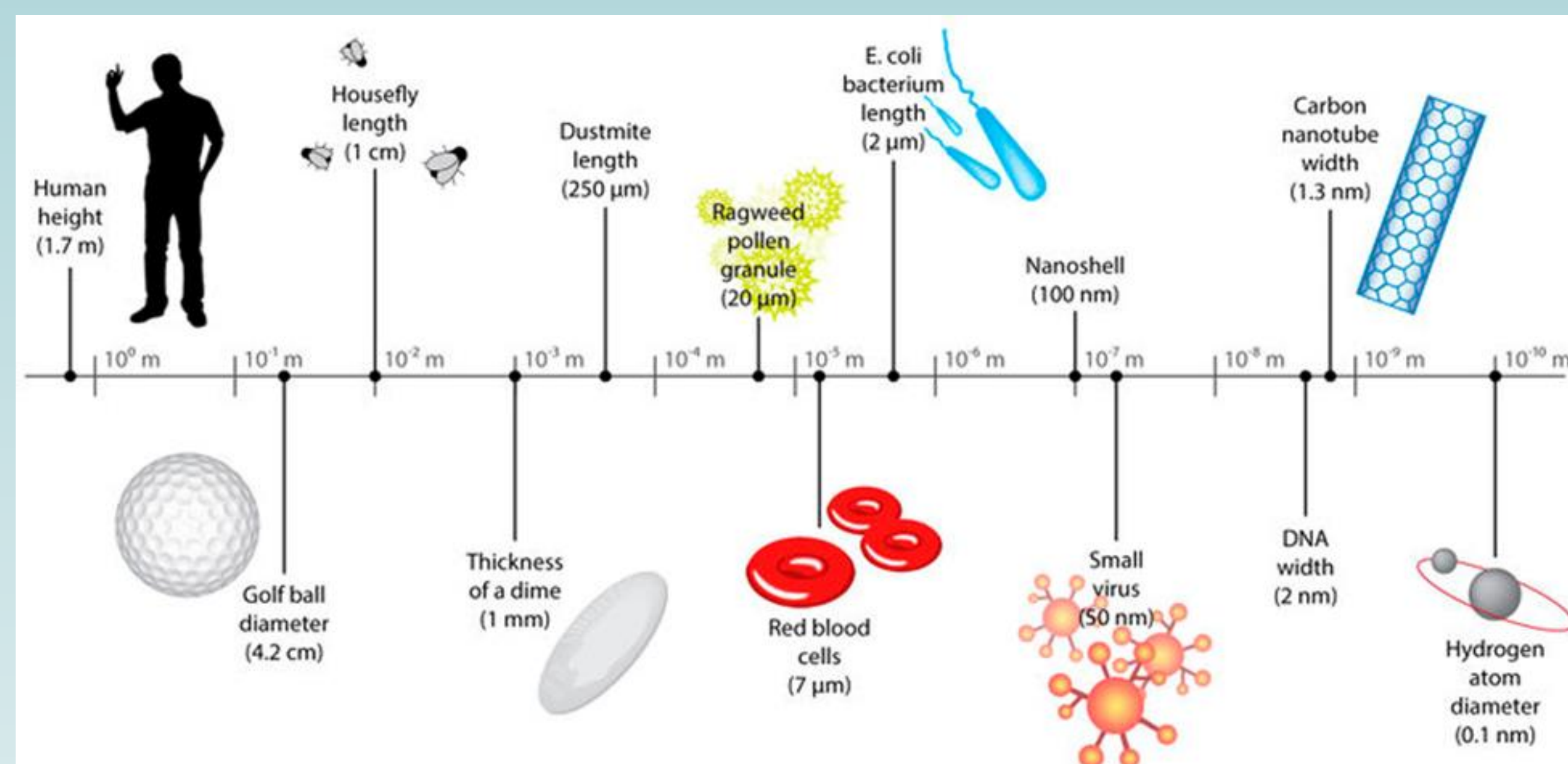


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## Unit Overview

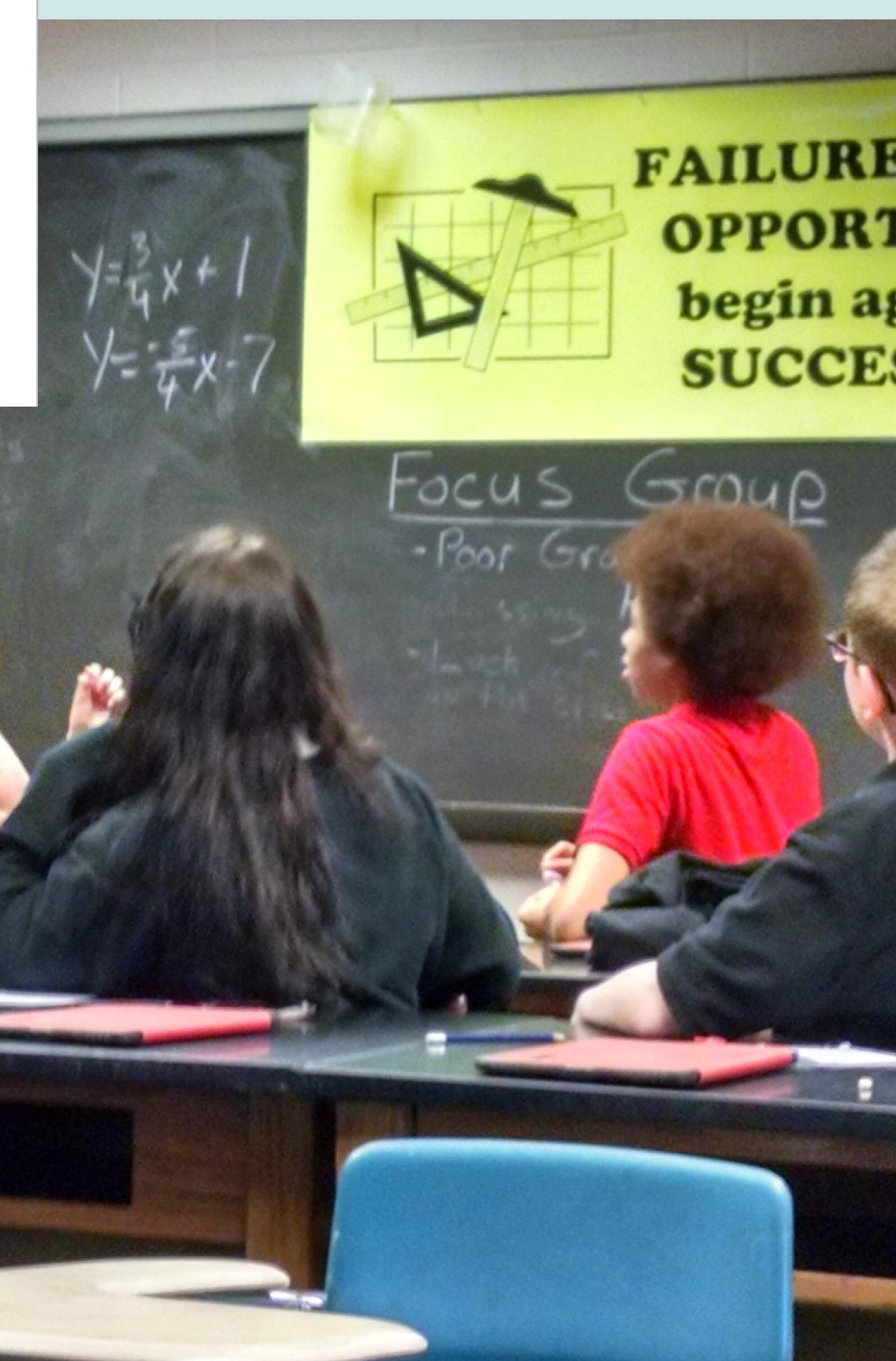
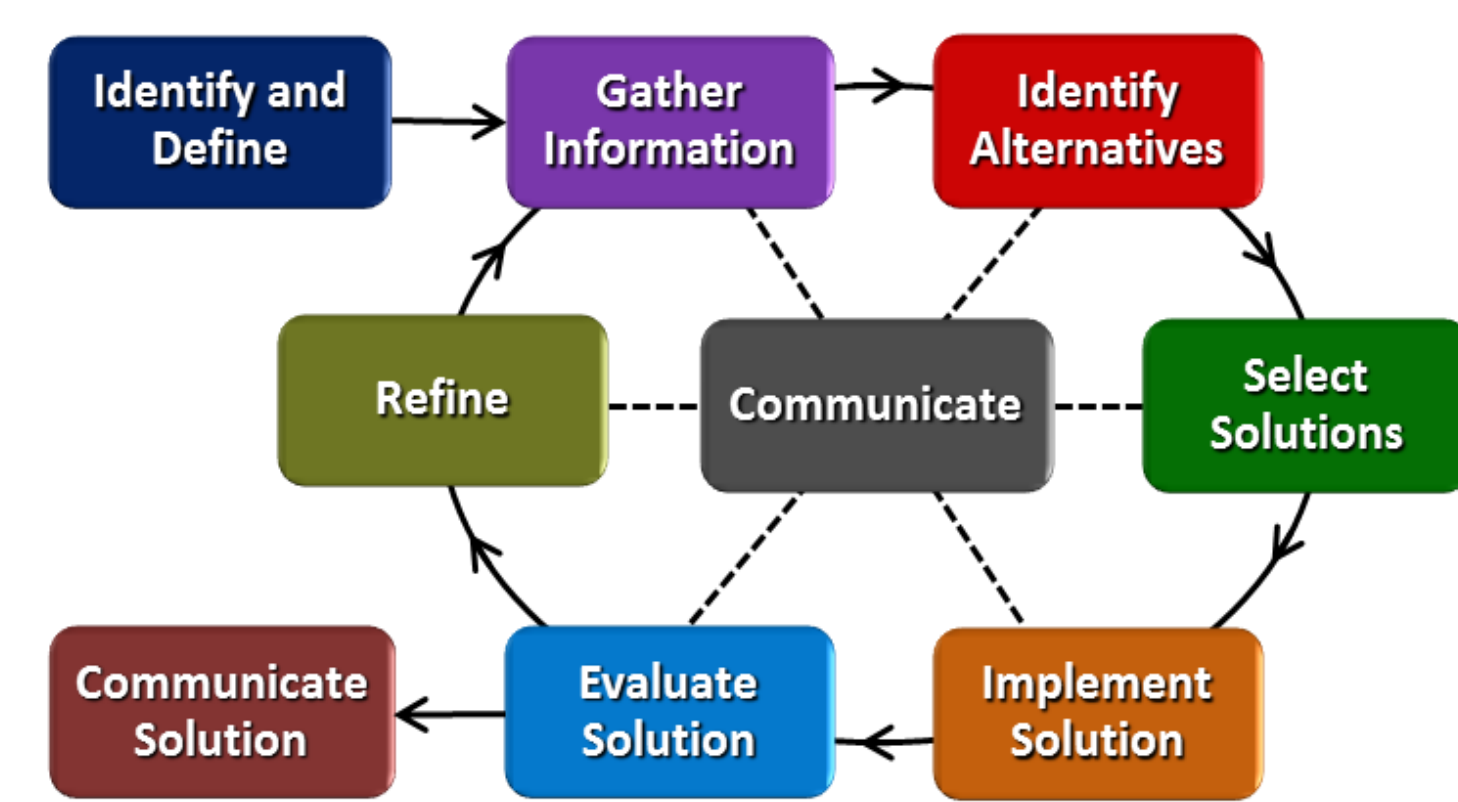
**Topic:** Introduction to Scientific Notation

**Standards:** Make sense of problems and persevere in solving them and Reason abstractly and quantitatively

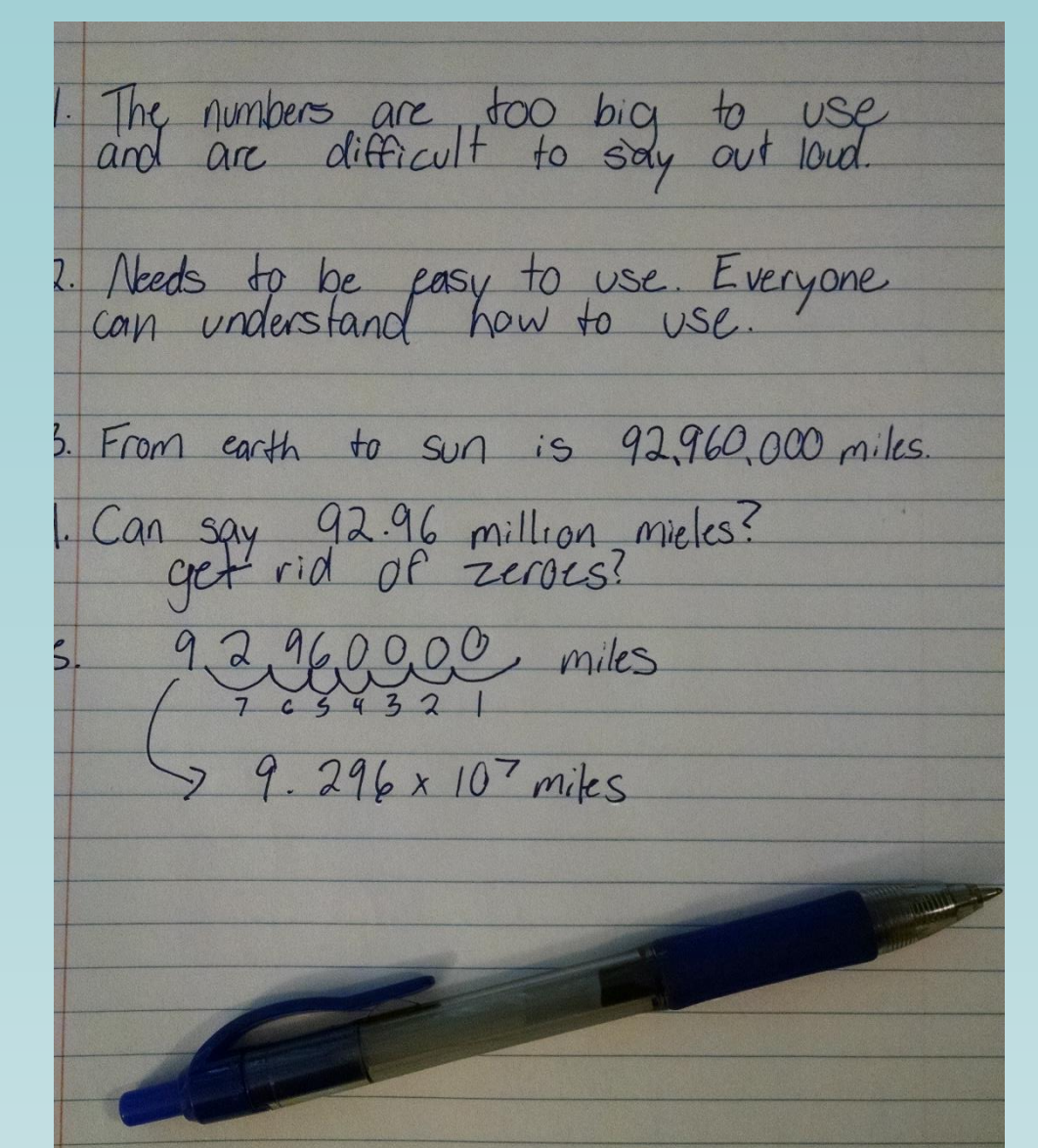
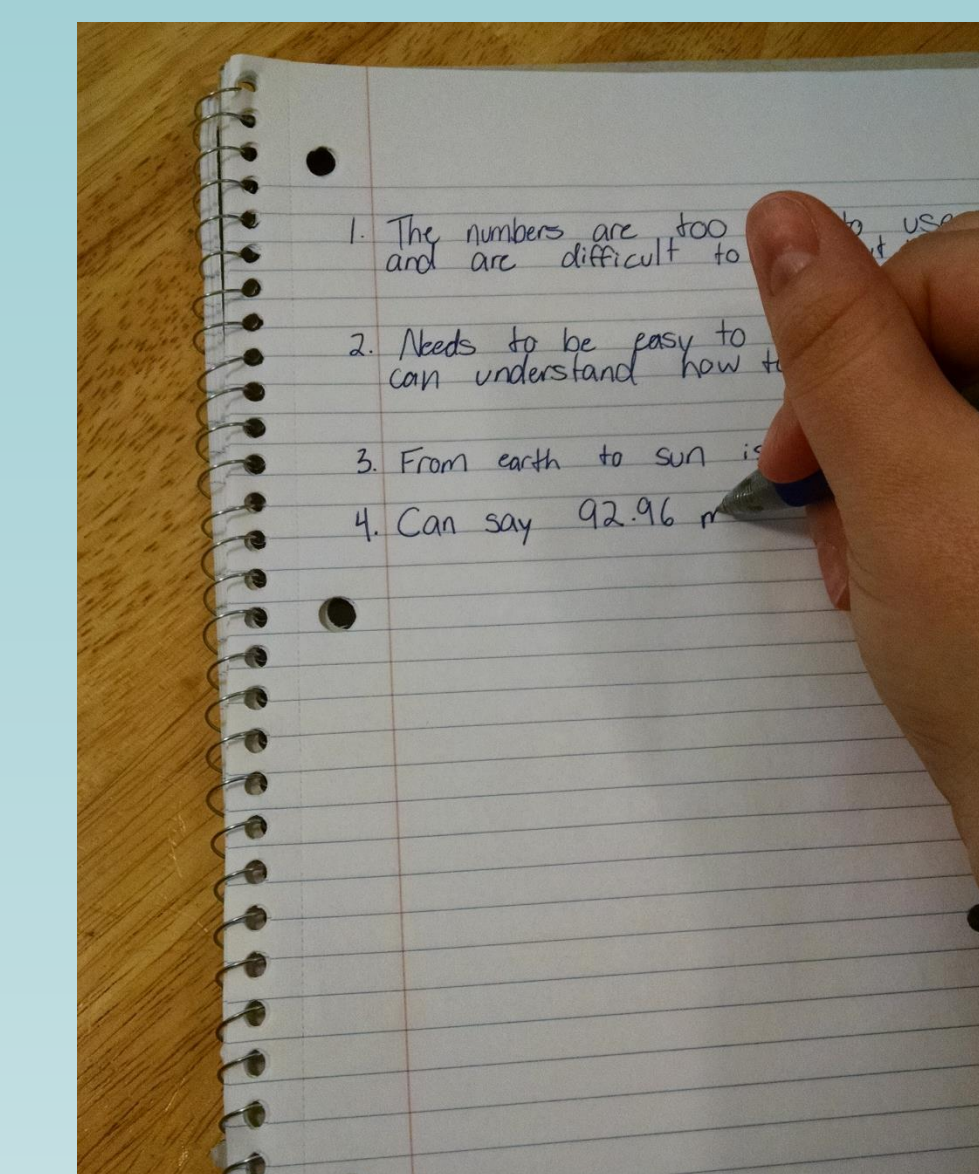


## Activity Implementation

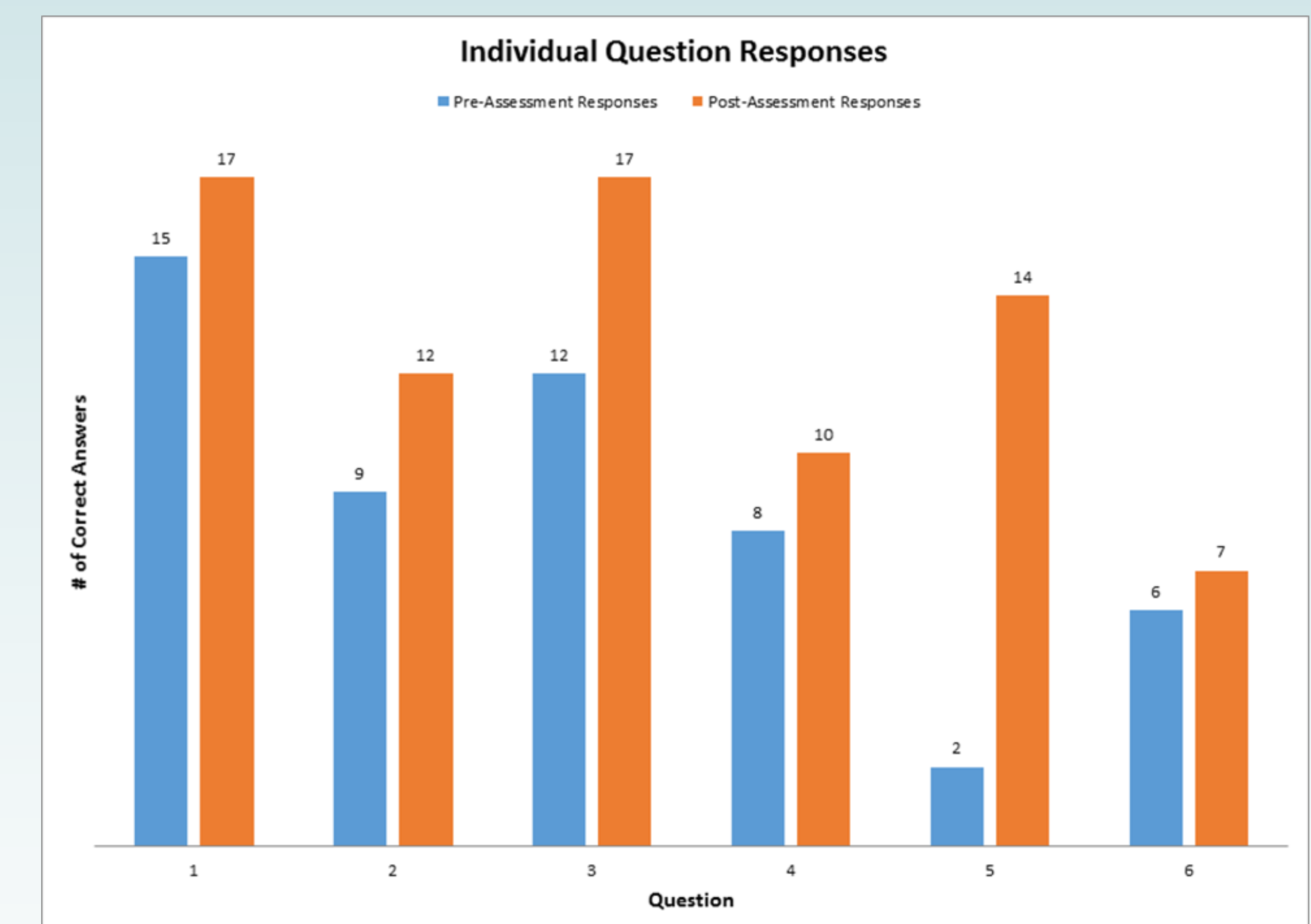
Introduce the activity using commonly abbreviated words and sentences (text message jargon). Discuss the need for scientific notation, explain the development using EDP. Split students into pairs and conduct several brief activities using iPads. Use monetary examples to explain the scale and differences between notation values. Play a quick 'classroom basketball' game for practice problems.



## Student Work



## Assessment Results: Impact on Student Learning



## Activity Structure

**Title:** Introduction to Scientific Notation

**Guiding Questions:**

- 1) How does multiplying by a power of 10 affect the value?
- 2) What is scientific notation?
- 3) How can a number be changed from standard to scientific notation?
- 4) How is scientific notation used in the "real world"?

**Objectives:**

- 1) Express numbers as a single digit times an integer power of 10.
- 2) Use scientific notation to estimate very large and/or very small quantities.
- 3) Compare quantities to express how much larger one is compared to another.

## Engineering Design Process

In order to better understand the need for scientific notation, the students participated in an activity using the EDP. First, the students were introduced to the problem, then they conducted some research, came up with some initial solutions, tested the solutions and compared, etc. Going through this process helped them to understand how the scientific notation was created and why EDP is important.

## Reflection and Conclusion

Students responded very well to activities and to real-world applications of the concept. Average test scores improved 24% after lesson.

Some things that could be done to improve are:

- Changing some of the assessment questions for clarity
- Use accelerated student's knowledge to help the rest of the class catch up