

Math Success with DMTI

THE FOUNDATIONAL ROLE OF MEASUREMENT IN MATHEMATICS

In today's edition, we explore:

- The Importance of Measurement in Mathematics Education
- Why Early Introduction Matters
- Practical Strategies for Teaching Measurement

Educators!

This week, we're focusing on measurement, a foundational concept that unlocks a deeper understanding of mathematics for your students. Research shows that introducing measurement early is crucial for building a robust and flexible understanding of mathematical concepts, preparing students for success in number topics, advanced mathematics and real-world applications.

Understanding the Role of Measurement in Mathematics

Richard Lehrer's research highlights the importance of measurement as a bridge between qualitative and quantitative understanding. Measurement involves identifying attributes, selecting units, and iterating those units to quantify attributes. This process helps students develop a strong foundation in number sense, fractions, geometry, and data analysis.

Key Strategies for Teaching Measurement

Research emphasizes several effective strategies for developing a comprehensive understanding of measurement:

- **Use Multiple Representations:** Employ enactive (hands-on), iconic (visual), and symbolic (abstract) models to illustrate measurement concepts.
- **Connect to Prior Knowledge:** Introduce measurement concepts by building upon students' understanding of counting and comparison.
- **Emphasize Precise Language:** Clearly define terms like "attribute," "unit," "iterate," "partition," and "scale" to foster conceptual clarity.

Effective Teaching Approaches

To successfully implement these strategies, consider the following approaches:

- **Hands-On Activities:** Use real-world objects to demonstrate measurement concepts, such as measuring lengths with non-standard units.

- **Encourage Discussion:** Have students explain their measurement strategies and compare different methods.
- **Connect Concepts:** Show how measurement relates to other mathematical operations and real-world applications.

Classroom Tips

- **Grade-Level Activities:** In early grades, use body parts or everyday objects as non-standard units for measuring length.
- **Transition to Standard Units:** Gradually introduce standard units like meters or inches, emphasizing the importance of precision and consistency.
- **Real-World Applications:** Explore how measurement is used in cooking, construction, or science experiments to illustrate its practical relevance.

A Teacher's Perspective

I never realized how much measurement underpinned other math concepts until I started teaching it more intentionally. Now, my students see math as connected and meaningful! — Emily R., 3rd Grade Teacher

By emphasizing measurement education, we help students build a strong foundation for mathematical thinking, improving their current performance and setting them up for long-term success in mathematics and STEM fields.

How are you incorporating measurement concepts in your classroom? Email us at mathsuccess@dmty.org to share your strategies and insights for future newsletters!

Keep developing mathematical thinking!

#MathEducation #MeasurementMatters #ElementaryMath #TeachingMath #DMTI

#DevelopingMathematicalThinkingInstitute #MathSuccess #RichardLehrer #Measurement #JonathanBrendefur

MORE INFORMATION

This is a quick summary of this topic, but if you want to download and read the research overview or watch the video, go to **Research Overviews** at dmtyinstitute.com/research

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