Lesson 3: Metric Conversion and Multiplication by Powers of Ten

Standards Alignments

Addressing   5.MD.A.1, 5.NBT.A.2

Teacher-facing Learning Goals

- Convert from larger units to smaller units within a given system of measurement.
- Explain patterns in the number of zeros of the product when multiplying a number by powers of 10.

Student-facing Learning Goals

- Let's notice patterns in metric measurements.

Lesson Purpose

The purpose of this lesson is for students to convert from a larger metric length unit to a smaller unit. Students observe patterns when different numbers are multiplied by 10, 100, or 1,000.

In this lesson, students apply place value reasoning to convert between different metric lengths. Students notice patterns in whole number and decimal products when a number is multiplied by a power of 10 (MP7). This builds on the previous lesson where students studied powers of 10. This is the first of several lessons that focus on metric units, specifically length, which all differ by powers of 10. The contexts for the first two lessons come from different events in track and field. This lesson focuses on the standing broad jump and longer distance runs.

Access for:

⊗ Students with Disabilities

- Representation (Activity 1)

🌐 English Learners

- MLR8 (Activity 2)

Instructional Routines

Number Talk (Warm-up)

Materials to Gather

- Metersticks: Activity 1, Activity 2

Lesson Timeline

Warm-up	10 min
Activity 1	20 min
Activity 2	15 min
Lesson Synthesis	10 min
Cool-down	5 min

Teacher Reflection Question

Reflect on your experience with the Number Talks in the curriculum. What questions have you asked to connect student thinking during this routine? What new questions could you ask next time?

Cool-down (to be completed at the end of the lesson)   🕐   5 min

Kilometers

Standards Alignments

Addressing   5.MD.A.1, 5.NBT.A.2

Student-facing Task Statement

Complete the table. Explain or show your reasoning.

meters	centimeters	millimeters
6.5		

Student Responses

meters	centimeters	millimeters
6.5	650	6,500

Sample response: $100 \times 6.5 = 650$, $10 \times 650 = 6,500$