

# Lesson 3: Metric Conversion and Multiplication by Powers of Ten

- Let's notice patterns in metric measurements.

## Warm-up: Number Talk

Find the value of each expression mentally.

- $100 \times 1.5$
  
  
  
  
  
  
  
  
  
  
- $1,000 \times 1.5$
  
  
  
  
  
  
  
  
  
  
- $15 \div 10$
  
  
  
  
  
  
  
  
  
  
- $15 \div 100$

### 3.1: How Tall? How Long? How Far?



1. Complete the table.

meters	centimeters	millimeters
1		
10		
$10^2$		

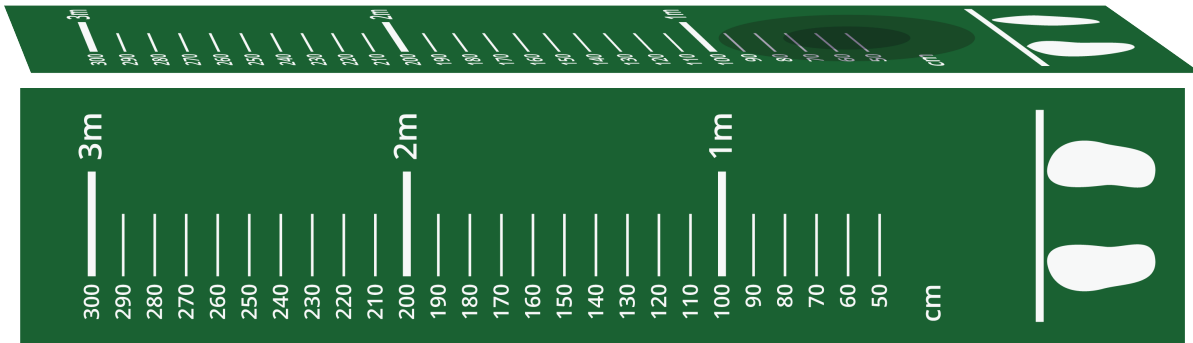
2. What patterns do you notice in the table?

3. Three long-distance races are 10 kilometers, 100 kilometers, and 1,000 kilometers. How many meters are there in these races?

distance in kilometers	distance in meters
1	1,000
10	
100	
$10^3$	

4. What patterns do you notice in the table?

### 3.2: Broad Jump



Here are the distances that each student jumped.

student	distance
Mai	1.61 meters
Tyler	1.43 meters
Clare	1.57 meters

1. The average standing broad jump distance for 5th graders is 148 centimeters. Are each of the students in the table below, at, or above the average? Explain or show your reasoning.

2. The world record for the standing broad jump is 337 centimeters. Jada says that's more than Mai and Clare jumped combined. Do you agree with Jada? Explain or show your reasoning.

3. Tyler says his jump sounds more impressive if he reports it in millimeters.

a. How far is Tyler's jump in millimeters? What about Mai's and Clare's jumps?

b. Which unit do you think is best for reporting the jumps? Explain your reasoning.

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