Unit 6, Lesson 4

Metric Conversion and Division by Powers of 10

Let's convert units.

Warm-up

True or False: Divide by a Hundred and by a Thousand

Decide if each statement is true or false. Be prepared to explain your reasoning.

- $5 \div 1{,}000 = 0.05$

- $36 \div 100 = 0.36$

- $1{,}328 \div 1{,}000 = 1.328$

Activity 1

Long Jump, Javelin Throw, and Shot Put

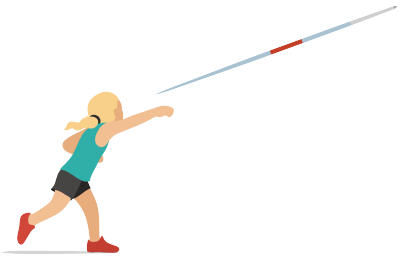
athlete	long jump	javelin throw	shot put
Jackie Joyner-Kersee, USA	727 cm	4,566 cm	1,580 cm
Sabine John, East Germany	671 cm	4,256 cm	1,623 cm
Anke Behmer, East Germany	678 cm	4,454 cm	1,420 cm

1. At the 1988 Summer Olympics, Jackie Joyner-Kersee set the still-standing world record in the heptathlon, which is a combination of 7 track-and-field events. These are the results, in centimeters, of some of the events, showing the first-, second-, and third-place athletes. Complete the table to show Joyner-Kersee's distances in meters.

event	centimeters	meters
long jump	727	
javelin throw	4,566	
shot put	1,580	

2. Which unit of measure, centimeters, or meters, is most helpful when you picture each distance? Explain or show your reasoning.

3. Why do you think distances are measured to the nearest centimeter?



Activity 2

Hurdles

1. The table shows how many meters students ran during a week. Complete the table to show these distances in kilometers.

student	distance (meters)	distance (kilometers)
Diego	9,513	
Clare	11,018	
Priya	8,210	
Andre	10,000	

2. What patterns do you notice in the table?

3. This is Tyler's strategy to divide a whole number by 10, by 100, or by 1,000.

I find the quotient by shifting the digits to the right — once when I divide by 10, twice when I divide by 100, 3 times when I divide by 1,000.

5,632 / 10 = 563.2
5,632 / 100 = 56.32
5,632 / 1,000 = 5.632

Describe Tyler's strategy to your partner.

(Pause for teacher direction.)

4. Why does Tyler's strategy work? Does Tyler's strategy always work? Explain or show your reasoning.