## Lesson 4: Metric Conversion and Division by Powers of Ten

* Let’s convert units.

### Warm-up: True or False: Divide by a Hundred and a Thousand

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

* $5÷1,​000=0.05$
* $36÷100=0.36$
* $1,​328÷1,​000=1.328$

### 4.1: 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, Germany | 671 cm | 4,256 cm | 1,623 cm |
| Anke Behmer, Germany | 678 cm | 4,454 cm | 1,420 cm |

1. Below are some results Jackie Joyner-Kersee recorded in different events in 1988. Complete the table.

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

1. Which unit of measure is most helpful when you picture each distance, centimeters or meters? Explain or show your reasoning.
2. Why do you think that the distances are measured to the nearest centimeter?



### 4.2: Hurdles

1. The table shows how many meters some students ran during a week. Complete the table to show how many kilometers each student ran.

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

1. What patterns do you notice in the table?
2. Below is Tyler’s strategy to divide a whole number by 10, 100, or 1,000.
* 
* Describe to your partner what Tyler means.
* (Pause for teacher direction.)
1. Why does Tyler’s strategy work? Will Tyler’s strategy always work? Explain or show your reasoning.



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