|  |  |
| --- | --- |
| **NC.5.MD.1**  **Who Ran Farther?** | |
| **Domain** | **Measurement and Data** |
| **Cluster** | **Convert like measurement units within a given measurement system.** |
| **Standard(s)** | **NC.5.MD.1** Given a conversion chart, use multiplicative reasoning to solve one-step conversion problems within a given measurement system. |
| **Materials** | Task handout, Calculators (optional) |
| **Task** | **Who Ran Farther?**  In order to prepare for next month’s 5 kilometer (km) race, students ran last week. The table shows the amount that each person ran during the 4 running days.   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | **Person** | **Day 1** | **Day 2** | **Day 3** | **Day 4** | **Total Distance** | | Tomas | 6 and 1/2 km | 3,750 m | 5.15 km | 2,500 m |  | | Jackie | 8,000 m | 1,800 m | 4,300 m | 3.4 km |  | | Ruby | 5.9 km | 1.7 km | 4,250 m | 5,270 m |  | | Abe | 2,790 m | 3.2 km | 4.91 km | 6,200 m |  |   **1 kilometer = 1 meter**  Based on the data above:   1. How far did each person run during the 4 running days last week? 2. Which runner ran the longest distance on a day? How long was that run? 3. Which runner ran the shortest distance on a day? How long was that run? 4. Bobby ran farther than everyone in the table. He ran the same distance each day. How far could Bobby have run each day? Write a sentence to explain how you found your answer. 5. Sarah ran farther than 2 of the people in the table and less distance than everyone else in the table. She ran the same distance each day. How far could Sarah have run each day? Write a sentence to explain how you found your answer. |

|  |  |  |
| --- | --- | --- |
| **Rubric** | | |
| **Level I**  **Not Yet** | 1. **Level II** 2. **Progressing** | **Level III**  **Meets Expectations** |
| * Students have limited understanding of the concept. | * Students provide correct answers but have an unclear or inaccurate explanation. OR * Students have one or two incorrect answers. | * Student provides correct answers and explanations. * 1) Tomas: 17.9 km or 17,900 m; Jackie: 17.5 km or 17,500 m; Ruby: 17.12 km or 17,120 m; Abe: 17.1 km or 17,100 m. * 2) Jackie on Day 1 ran 8,000m or 8 km. * 3) Ruby on Day 2 ran 1,700 m or 1.7 km. * 4) Bobby has to have run more than 17.9 km (17,900 m) or 4.475 km (4,475 m) each day. * 5) Sarah ran between 17.12 km (17,120 m) and 17.5 km (17,500 m) total. Sarah ran between 4.28 km (4,280 m) and 4.375 km (4,375 m) each day. |
| **Standards for Mathematical Practice** | | | |
| **1. Makes sense and perseveres in solving problems.** | | | |
| **2. Reasons abstractly and quantitatively.** | | | |
| **3. Constructs viable arguments and critiques the reasoning of others.** | | | |
| 4. Models with mathematics. | | | |
| 5. Uses appropriate tools strategically. | | | |
| 6**. Attends to precision.** | | | |
| 7. Looks for and makes use of structure. | | | |
| 8. Looks for and expresses regularity in repeated reasoning. | | | |

**Who Ran Farther?**

In order to prepare for next month’s 5 kilometer (km) race, students ran last week. The table shows the amount that each person ran during the 4 running days.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Person** | **Day 1** | **Day 2** | **Day 3** | **Day 4** | **Total Distance** |
| Tomas | 6 and 1/2 km | 3,750 m | 5.15 km | 2,500 m |  |
| Jackie | 8,000 m | 1,800 m | 4,300 m | 3.4 km |  |
| Ruby | 5.9 km | 1.7 km | 4,250 m | 5,270 m |  |
| Abe | 2,790 m | 3.2 km | 4.91 km | 6,200 m |  |

**1 kilometer = 1 meter**

Based on the data above:

1. How far did each person run during the 4 running days last week?
2. Which runner ran the longest distance on a day? How long was that run?
3. Which runner ran the shortest distance on a day? How long was that run?
4. Bobby ran farther than everyone in the table. He ran the same distance each day. How far could Bobby have run each day? Write a sentence to explain how you found your answer.
5. Sarah ran faster than 2 of the people in the table and slower than everyone else. She ran the same distance each day. How far could Sarah have run each day? Write a sentence to explain how you found your answer.