|  |
| --- |
| **Dividing by Multiples of Ten** **4.NBT.6 Task 1** |
| **Domain** | **Numbers and Operations in Base Ten** |
| **Cluster** | **Generalize place value understanding for multi-digit whole numbers.** |
| **Standard(s)** | **4.NBT.6** Find whole number quotients and remainders with up to four digit dividends and one digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. |
| **Materials** | Paper and pencil |
| **Task** | One component of understanding the relationship between multiplication and division is understanding how multiples of 10, 100, or 1000 affect products and quotients. In these explorations, students work with multiples of 10 as divisors to understand how they relate to the quotient.***Part 1: Use pictures and numbers to explain how 27 divided by 3 is related to 270 divided by 3 and 2,700 divided by 3.******Part 2: Prove that 23 divided by 4 is the same as 230 divided by 40.*** |

|  |
| --- |
| **Rubric** |
| **Level I** | **Level II** | **Level III** |
| Limited Performance* Students are unable to divide multi-digit numbers using the standard algorithm or invented strategies.
 | Not Yet Proficient* Students can divide multi-digit numbers using one or more strategies, but they are not consistently accurate. They are unable to explain how multiples of 10, 100, or 1000 affect products and quotients.
 | Proficient in Performance* Students use at least two different ways to divide multi-digit numbers accurately. They are able to explain how multiples of 10, 100, or 1000 affect products and quotients.
 |

|  |
| --- |
| **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. |

**Dividing by Multiples of Ten**

**Part 1**: Use pictures and numbers to explain how 27 divided by 3 is related to 270 divided by 3 and 2,700 divided by 3.

**Part 2**: Prove that 23 divided by 4 is the same as 230 divided by 40.