NWEA Assessment Item Illustrating 4.NBT.A.2

Domain: Number and Operations in Base Ten
4.NBT.A: Generalize place value understanding for multi-digit whole numbers.
Calculator Availability: No

Complete the comparisons. Move the correct symbol to each box.

$5,362$ ☐ $500 + 300 + 60 + 2$

$5,362$ ☐ $5 \text{ thousands} + 36 \text{ hundreds} + 2 \text{ tens}$

$5,362$ ☐ $5 \text{ thousands} + 3 \text{ hundreds} + 2 \text{ tens} + 6 \text{ ones}$

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Alignment: 4.NBT.A.2: Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.

In grade 4, students deepen their understanding of place value in multi-digit whole numbers by recognizing the meaning of digits in different places;[4.NBT.A.1] reading, writing, and comparing multi-digit numbers;[4.NBT.A.2] and rounding multi-digit numbers.[4.NBT.A.3] This item gives students three opportunities to interact with place value when comparing 5,362 to numbers in expanded form, and in doing so, is a better measure of students' understanding. The second comparison in this item may be particularly challenging to students since they must understand that 5 thousands + 36 hundreds + 2 tens is equal to 5,000 + 3,600 + 20 and not 5,000 + 360 + 2. Having a strong understanding of place value supports the work that students do with multi-digit computation, in particular in the Operations and Algebraic Thinking domain, in which they solve word problems.[4.OA.A.3]

Coherence: Understanding place value is emphasized throughout the Number and Operations in Base Ten domain, and there is a cluster devoted to it in almost every elementary grade level.[K.NBT.A, 1.NBT.B, 2.NBT.A, 5.NBT.A] In grades K–2, students learned the value of a one, the value of a ten, and the value of a hundred. By grade 4, students generalize that knowledge to understand that "in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right."[4.NBT.A.1] Students use this understanding to compare multi-digit whole numbers in items like this. In grade 5, students will extend their place-value understanding to decimals.[5.NBT.A.3, 5.NBT.A.4]

Rigor: This item attends to conceptual understanding, as it requires students to demonstrate their understanding of place value.

Answer Key:

Complete the comparisons. Move the correct symbol to each box.

$5,362$ [>] $500 + 300 + 60 + 2$

$5,362$ [<] $5 \text{ thousands} + 36 \text{ hundreds} + 2 \text{ tens}$

$5,362$ [>] $5 \text{ thousands} + 3 \text{ hundreds} + 2 \text{ tens} + 6 \text{ ones}$

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