

NWEA Assessment Item Illustrating 1.NBT.C.4

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Domain: Number and Operations in Base Ten

1.NBT.C: Use place value understanding and properties of operations to add and subtract.

Calculator Availability: No



Move a number to the line to make a true equation.

$$34 + 7 = 30 + \underline{\quad}$$

1

4

7

11

14

34

41

71

Alignment: 1.NBT.C.4: Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.

Adding and subtracting within 100 using strategies based on place value understanding and the properties of operations is key content in grade 1. It is important that students have many opportunities to work non-algorithmically with addition and subtraction so that they truly understand the meaning of addition and subtraction and gain experience composing tens from ones. This item has students add a two-digit number to a one-digit number and requires regrouping. Students may solve in different ways. They may add 34 and 7 and then determine what number plus 30 equals 41. Or, they may decompose 34 into $30 + 4$ and then add $4 + 7$. At this level, it is appropriate for some students to draw base-ten blocks or other representations to help them solve. Regardless of approach, students need to understand that the equal sign means the expressions on either side must be equivalent, which is another key understanding of this grade.

Coherence: In kindergarten, students spent a great deal of time on understanding the meaning of addition and subtraction as adding to and taking from.^{K.OA.A.2} They did this work in the context of making 10 by composing and decomposing numbers within 10 and finding the number to add to another number to make 10.^{K.OA.A.3, K.OA.A.4} This prepared students for the work in addition and subtraction that they do in grade 1, which includes applying the properties of operations to addition and subtraction^{1.OA.B} and using strategies to add and subtract.^{1.OA.C.6} Students also learn the meaning of the equal sign, understanding that it indicates equal quantities on either side rather than indicating the answer. Having a foundation in properties of operations and strategies for addition and subtraction is vital to students being successful at adding within 100.^{1.NBT.C.4} It also prepares students for grade 2.

In grade 2, students will be expected to fluently add and subtract within 100^{2.NBT.B.5} as well as solve word problems with addition and subtraction within 100.^{2.OA.A.1} It is important that students gain a conceptual understanding of both addition and subtraction in grades K–2 because starting in grade 3 the focus of

their work will move to multiplication, division, and fractions. Students will need to have a strong foundation in addition and subtraction in order to successfully navigate the content for grades 3–5.

Rigor: This item attends to conceptual understanding and procedural skill. In order to solve, students need to understand the concept that the equal sign indicates equivalent amounts. Adding a two-digit and a one-digit number is a grade-level computation.

Answer Key:

Move a number to the line to make a true equation.

$$34 + 7 = 30 + \underline{11}$$

1

4

7

14

34

41

71

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