

# NWEA Assessment Item Illustrating 2.OA.A.1

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**Domain:** Operations and Algebraic Thinking

**2.OA.A:** Represent and solve problems involving addition and subtraction.

**Calculator Availability:** No

Use the information to answer the question.

Hannah has 12 fewer stickers than Emma. Hannah has 26 stickers. How many stickers does Emma have?

Which equation can be used to find out how many stickers Emma has?

A.  $12 + \square = 26$

B.  $12 + 26 = \square$

C.  $26 - \square = 12$

D.  $26 - 12 = \square$

**Alignment: 2.OA.A.1:** Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.

This item targets “equations with a symbol for the unknown number to represent the problem.” By grade 2, students are expected to solve the full range of one- and two-step problem types outlined in Table 1 of the CCSS Mathematics Glossary. This is a one-step compare problem in which the unknown is the greater value. The use of the word “fewer” increases this item’s difficulty because the word *fewer* typically suggests subtraction, whereas students use addition to solve this item.

**Coherence:** Students have been representing addition and subtraction word problems since kindergarten. While progressing through increasingly complex item types and greater numbers, students have developed more sophisticated means of representation. In kindergarten, students engaged in more concrete and pictorial representations using objects and drawings.<sup>K.OA.A.2</sup> In grades 1 and 2, students transitioned to more abstract representations using equations with a symbol for the unknown.<sup>1.OA.A</sup> Moving forward, students in grade 3 will use a letter to represent the unknown.<sup>3.OA.D.8</sup> Using symbols and letters to represent unknowns in all positions lays the foundation for work in algebra and allows students to develop algebraic understandings long before students are formally introduced to algebraic processes.

**Rigor:** This item attends to conceptual understanding and application. The ability to translate a contextual problem into an equation requires conceptual understanding. This item requires an application of mathematics in a real-world scenario in which the operation is directly indicated.

**Answer Key:**

Use the information to answer the question.

Hannah has 12 fewer stickers than Emma. Hannah has 26 stickers. How many stickers does Emma have?

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