

NWEA Assessment Item Illustrating 2.OA.C.4

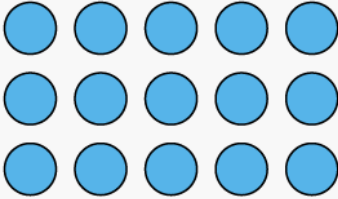
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Domain: Operations and Algebraic Thinking

2.OA.C: Work with equal groups of objects to gain foundations for multiplication.

Calculator Availability: No

This question has two parts. Use the array to answer Part A and Part B.

| | |
|---|--|
|  | Part A Which <u>two</u> expressions can be used to find the total number of circles? |
| | <input type="checkbox"/> A. $3 + 3 + 3$ <input type="checkbox"/> B. $3 + 3 + 3 + 3 + 3$ <input type="checkbox"/> C. $5 + 5 + 5$ <input type="checkbox"/> D. $5 + 5 + 5 + 5 + 5$ |
| | Part B What is the total number of circles? Enter the answer in the box. |
| | <input type="text"/> circles |

Alignment: 2.OA.C.4: Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns; write an equation to express the total as a sum of equal addends.

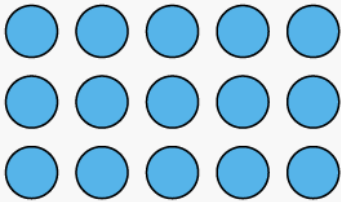
Asking students to relate arrays to equal-group addition expressions and equations connects the important work of kindergarten through grade 2 (addition and subtraction) with the important work in grades 3 through 5 (multiplication and division). This item is designed in a way that requires students to understand that the array represents 3 groups of 5 as well as 5 groups of 3 and that both interpretations have the same total.

Coherence: This standard lays the groundwork for understanding multiplication and division by using concrete objects and visual representations to develop the idea of equal groups. The skip counting^{2.NBT.A.2} done at this grade also supports the understanding of equal groups, but in a more abstract and cognitively challenging way. In grade 3, students will learn to think of products as multiplying the number in a group by the number of groups, rather than adding equal groups.^{3.OA.A.1} Students' understanding of multiplication will continue to expand beyond equal groups to include multiplicative comparison^{4.OA.A.1, 4.OA.A.2} and the concept of scaling.^{5.NF.B.5}

Rigor: This item attends to conceptual understanding and procedural skill. The visual representation of an array supports the conceptual understanding of the meaning of equal groups. Although procedural skill is required to compute the total, the addition required is appropriately below grade level.

Answer Key:

This question has two parts. Use the array to answer Part A and Part B.



Part A
Which two expressions can be used to find the total number of circles?

A. $3 + 3 + 3$

B. $3 + 3 + 3 + 3 + 3$

C. $5 + 5 + 5$

D. $5 + 5 + 5 + 5 + 5$

Part B
What is the total number of circles? Enter the answer in the box.

circles

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