

Grade 4: Cobra vs. Iguana

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4.MD.A.1 - Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table. *For example, know that 1 ft is 12 times as long as 1 in. Express the length of a 4 ft snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36), ...*

A cobra is 6 yards long. An iguana is 6 feet long. How much longer is the cobra?

Write the answer and circle the unit of your answer.

feet
yards

Solution

Correct if student writes 12 in the box and selects “feet” or writes 4 in the box and selects “yards.”

To compare 6 yards with 6 feet, express both measurements in feet or both measurements in yards. There are 3 feet in a yard. If we express both measurements in feet, then the cobra is 18 feet long and the iguana is 6 feet long, so the cobra is $18 - 6 = 12$ feet longer. One correct answer is, therefore, 12 feet.

If we express both measurements in yards, then the cobra is 6 yards long and the iguana is 2 yards long, so the cobra is $6 - 2 = 4$ yards longer. Another correct answer is, therefore, 4 yards. Since feet and yards are the only choices provided for the length unit, 12 feet and 4 yards are the only two possible correct answers.

If students are having a hard time grasping the question, ask them to draw a cobra and an iguana, labeling the animals with their lengths (be sure to write feet or yards next to each number 6). The cobra should be drawn stretched out, not coiled up.

Elaboration on Alignment

In grade 4, students learn unit conversions and convert from a larger to a smaller unit in the same system of units (here, U.S. customary). Although one way to solve the problem is to convert from feet to yards, converting from yards to feet is all that is necessary to get the answer right.

This is a conceptual question with very little computational demand. The numerical value for the length of the snake in yards (6) is the same as the numerical value for the length of the iguana in feet (6) in order to emphasize that one cannot compare numerical values directly without attention to the unit of measure. (Doing so would yield the nonsense answer $6 - 6 = 0$.)

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Name: _____

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feet
yards