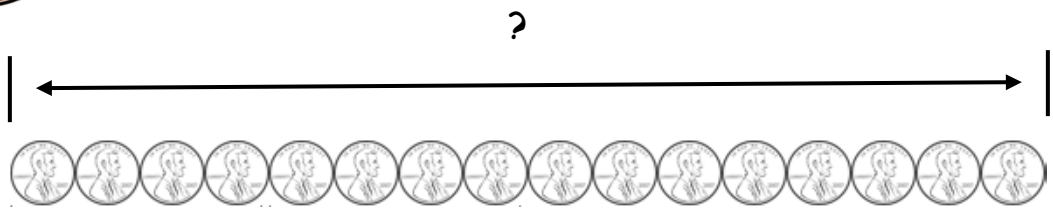
Grade 4: The Penny

4.NF.B.4 – Apply and extend previous understandings of multiplication to multiply a fraction by a whole number.

> **4.NF.B.4c -** Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem. *For example, if each person at a party will eat 3/8 of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie?*

A penny is $\frac{3}{4}$ inch wide. How wide is a group of 16 pennies side-by-side?



Answer: ☐ inches

Solution

Correct if student writes 12 or $^{48}/_{4}$ in the box.

One way to get the answer is to start by calculating the width of the group: $16 \times {}^{3}/_{4}$.

$16 \times {}^{3}/_{4}$

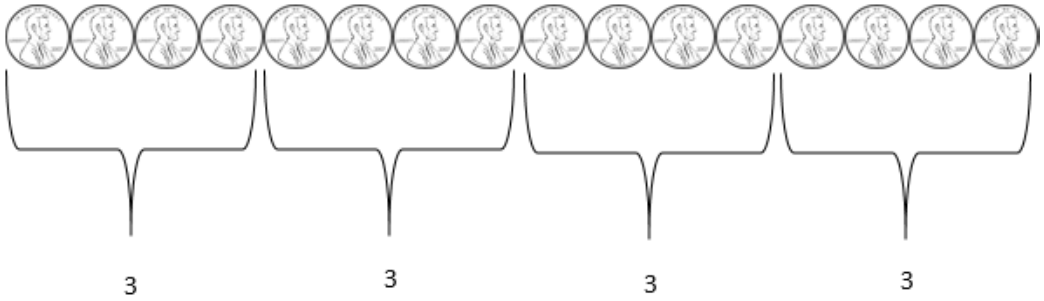
$= 16 \times (3 \times {}^{1}/_{4})$

$= 48 \times {}^{1}/_{4}$

$= {}^{48}/_{4}$ inches

It isn't absolutely necessary to simplify $^{48}/_{4}$, but students may recognize that it is 12.

Another way to get the answer is to reason that every 4 pennies measures 3 inches, as shown in this diagram. Since there are 4 groups of 4 pennies, there are 4 groups of 3 inches of pennies, which equals 12 inches.



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Name: _____

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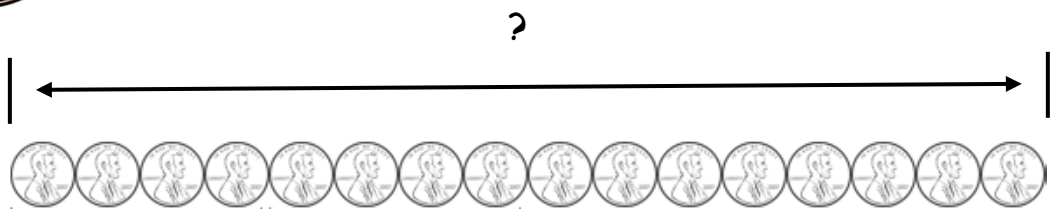

Answer: ☐ inches