

Name: _____

Date: _____

MULTIPLYING FRACTIONS BY WHOLE NUMBERS

N-GEN MATH[®] 6



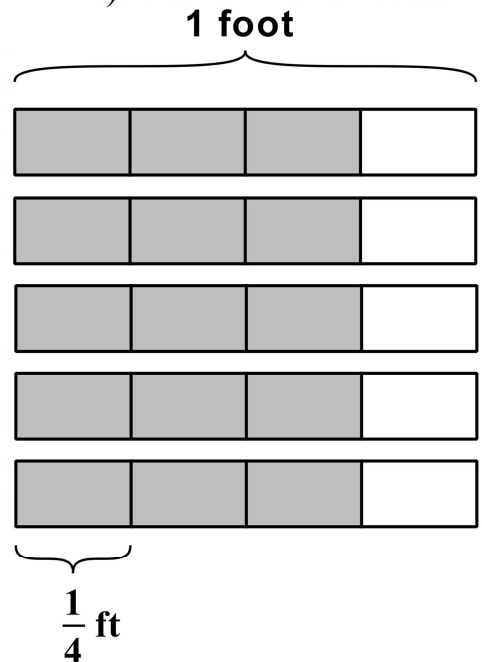
Multiplying fractions and whole numbers is an important process because it comes up many times in practical settings. In this lesson we review multiplying a fraction by a whole number and its meaning. Remember, multiplication is our way of representing how much of another quantity (number) we have.

Exercise #1: Emily is working with 5 boards that are all $\frac{3}{4}$ of a foot long. The image below shows a representation of the boards Emily has (shown as the shaded portions).

(a) Represent the total length of the five boards as a product.

(b) Based on the shaded portion, what must the product in (a) equal? Leave as an **improper fraction**.

(c) Given that $\frac{3}{4} = 3 \times \frac{1}{4}$, justify your answer (b) based on regrouping the multiplication from (a).



Exercise #2: Mark is making a cookie recipe that calls for $\frac{3}{4}$ of a cup of sugar. He triples the recipe. Write a product to represent the amount of sugar Mark will need. Evaluate the product and write your final answer as a mixed number.



Exercise #3: Find each of the following products. Write your answers in simplest form and as a mixed number if necessary.

(a) $8 \times \frac{1}{4}$

(b) $5 \times \frac{2}{3}$

(c) $8 \times \frac{5}{6}$

(d) $15 \times \frac{2}{5}$

(e) $7 \times \frac{5}{2}$

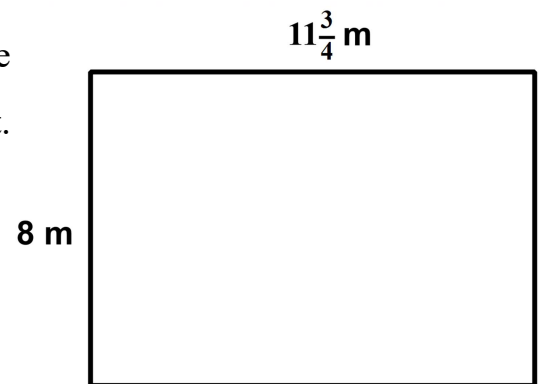
(f) $15 \times \frac{8}{5}$

(g) $25 \times \frac{3}{7}$

(h) $16 \times \frac{9}{4}$

Exercise #4: A rectangle has a width of 8 meters and a length of $11\frac{3}{4}$ meters as shown.

- (a) Justine believes she can find the area by using the calculation $88 + 8 \times \frac{3}{4}$. Explain why Justine is correct. What important **property** is Justine using?



- (b) Find the area of the rectangle. Use appropriate units.



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MULTIPLYING FRACTIONS BY WHOLE NUMBERS
N-GEN MATH[®] 6 HOMEWORK

FLUENCY

1. Find each of the following products. Write your answer in simplified form and as a mixed number if necessary.

(a) $8 \times \frac{2}{3}$

(b) $10 \times \frac{1}{4}$

(c) $4 \times \frac{5}{6}$

(d) $12 \times \frac{4}{3}$

(e) $11 \times \frac{3}{4}$

(f) $5 \times \frac{8}{3}$

(g) $12 \times \frac{3}{10}$

(h) $25 \times \frac{7}{4}$

2. Which of the following is the result of $21 \times \frac{5}{3}$?

(1) 32

(3) $31\frac{2}{3}$

(2) 35

(4) $36\frac{1}{3}$

3. The product of 5 and $\frac{7}{3}$ is closest to which of the following whole numbers?

(1) 10

(3) 12

(2) 11

(4) 13



USING YOUR MATH

4. Deon is watering his garden with a container that carries three-eighths of a gallon of water. If Deon uses 10 full containers to water the garden, how many total gallons does he use? Express your answer as a mixed number and justify how you found it.
5. Brian is walking $2\frac{3}{4}$ of a mile every day. He does this each day for one week.
- (a) Express the distance that Brian walks each day as an improper fraction. (b) What is the total distance Brian walks for the week? Express your answer as a mixed number.
6. A rectangle has a width of 6 feet and a length of $8\frac{1}{2}$ feet. What is its area in square feet? Justify your answer. (See *Exercise #4*)

REVIEWING YOUR MATH

7. Find each of the following sums and write in simplest form. You do not need to express as a mixed number.

(a) $\frac{7}{2} + \frac{5}{6}$

(b) $\frac{7}{6} + \frac{3}{4}$

(c) $\frac{2}{3} + \frac{4}{5}$

