

Grade 5 - Multiplication as Scaling - Worksheet

Common Core 5.NF.B.5a, 5.NF.B.5b · maths-pdf.fr/en/

Name: _____ Class: _____ Date: ____/____/____

These 20 problems practice multiplication as scaling, as described in standards 5.NF.B.5a and 5.NF.B.5b. Students predict whether a product is greater than, less than, or equal to a factor by comparing the scale factor with 1, and then check by calculating.

The last six problems are word problems about recipes, pets, photos, plants, baseball, and the school store. Use the bar models to see how numbers stretch or shrink.

Grade 5 · Common Core State Standards: **5.NF.B.5a, 5.NF.B.5b**

Exercise 1 - Predict the size

Without multiplying, decide whether $8 \times \frac{3}{4}$ is greater than, less than, or equal to 8. Explain.

Exercise 2 - Factor greater than 1

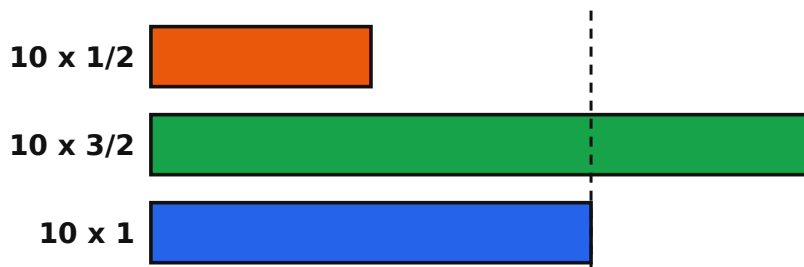
Without multiplying, decide whether $6 \times \frac{5}{4}$ is greater than, less than, or equal to 6.

Exercise 3 - Factor equal to 1

Without multiplying, decide whether $7 \times \frac{4}{4}$ is greater than, less than, or equal to 7.

Exercise 4 - Order the products

Order the products from least to greatest: $10 \times \frac{1}{2}$, $10 \times \frac{3}{2}$, and 10×1 . Use the bars to help.



The dashed line marks 10.

Exercise 5 - Fill in the symbols

Write $<$, $>$, or $=$ in each blank without calculating.

- a. $9 \times \frac{7}{8}$ $\underline{\hspace{1cm}}$ 9
- b. $9 \times \frac{1}{2}$ $\underline{\hspace{1cm}}$ 9
- c. $9 \times \frac{1}{3}$ $\underline{\hspace{1cm}}$ 9

Exercise 6 - Compare to one factor

Is $\frac{5}{6} \times \frac{1}{2}$ greater than or less than $\frac{5}{6}$? Then find the product.

Exercise 7 - Compute and compare

Find $12 \times \frac{3}{4}$. Is the product greater than or less than 12?

Exercise 8 - Scaling up

Find $6 \times \frac{5}{3}$. Is the product greater than or less than 6?

Exercise 9 - Smaller than both factors

Find $\frac{2}{3} \times \frac{3}{4}$. Is the product greater than or less than each factor?

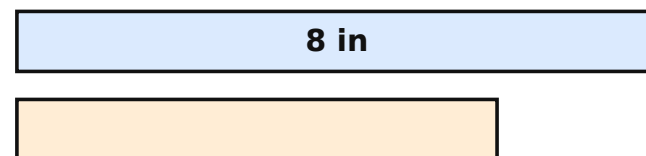
Exercise 10 - Resize a ribbon

A ribbon is 8 inches long. Ethan cuts a new ribbon that is $\frac{3}{4}$ as long. How long is the new ribbon?

Old ribbon

8 in

New ribbon



The new ribbon is $\frac{3}{4}$ as long as the old ribbon.

Exercise 11 - Which products are larger?

Which of these products are greater than 14? $14 \times \frac{2}{3}$, $14 \times \frac{7}{6}$, 14×1 , $14 \times \frac{5}{4}$. Use the scale factors, then check by calculating.

Exercise 12 - Mixed number scaled down

Find $2\frac{1}{2} \times \frac{4}{5}$. Is the product greater than or less than $2\frac{1}{2}$?

Exercise 13 - Mixed number scaled up

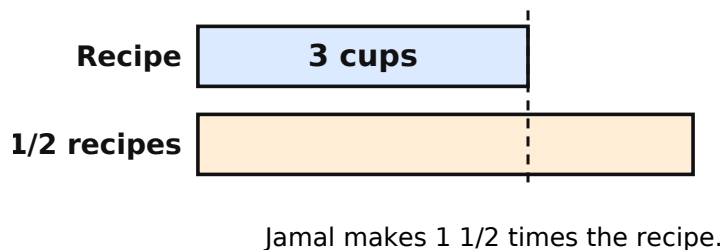
Find $3\frac{1}{3} \times 1\frac{1}{5}$. Is the product greater than or less than $3\frac{1}{3}$?

Exercise 14 - Explain two products

Find $\frac{1}{4} \times 8$ and $\frac{5}{4} \times 8$. Explain why one product is less than 8 and the other is greater than 8.

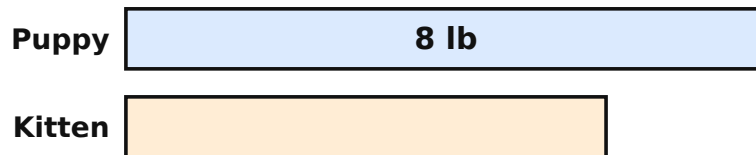
Exercise 15 - Bigger batch of pancakes

Jamal's pancake recipe uses 3 cups of flour. He makes $1\frac{1}{2}$ times the recipe for a team breakfast. Will he need more or less than 3 cups of flour? How much flour does he need?



Exercise 16 - Puppy and kitten

Sofia's puppy weighs 8 pounds. Her kitten weighs $\frac{3}{4}$ as much as the puppy. Does the kitten weigh more or less than the puppy? How much does the kitten weigh?



The kitten weighs $\frac{3}{4}$ as much as the puppy.

Exercise 17 - Enlarged photo

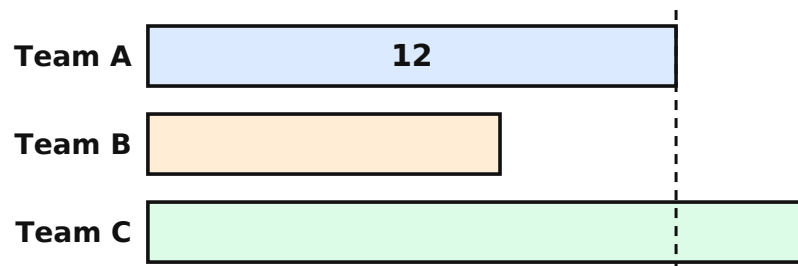
Priya enlarges a photo that is 6 inches wide. The new photo is $\frac{5}{2}$ times as wide. Will the new photo fit in a frame that is 12 inches wide?

Exercise 18 - Plant growth

Last week, Mei's plant was $2\frac{1}{4}$ feet tall. This week it is $\frac{4}{3}$ times as tall. How tall is the plant now? How many feet did it grow?

Exercise 19 - Little League runs

In a Little League tournament, Team A scored 12 runs. Team B scored $\frac{2}{3}$ as many runs as Team A. Team C scored $\frac{5}{4}$ as many runs as Team A. How many runs did Teams B and C score? Which team scored the most?



Team B scored $\frac{2}{3}$ as many runs as Team A. Team C scored $\frac{5}{4}$ as many.

Exercise 20 - School store prices

At the school store, a pencil costs \$0.80. An eraser costs $\frac{3}{4}$ as much as a pencil. A notebook costs $2\frac{1}{2}$ times as much as a pencil. What do the eraser and the notebook cost? What is the total cost of one pencil, one eraser, and one notebook?