

Luna's Space Adventure

Grade 5 · Multiplying as scaling · 5.NF.B.5

Name _____

Date _____



Astronaut Luna is exploring a far-off corner of space. Solve each problem to help Luna's mission go smoothly!

Bigger or smaller? Don't multiply. Is the factor more than 1, less than 1, or 1?

$4/3 \times 29$ is	less than 29	equal to 29	more than 29
$2/2 \times 41$ is	less than 41	equal to 41	more than 41
$3/4 \times 20$ is	less than 20	equal to 20	more than 20
$9/10 \times 46$ is	less than 46	equal to 46	more than 46
$7/8 \times 50$ is	less than 50	equal to 50	more than 50
$1/1 \times 56$ is	less than 56	equal to 56	more than 56
$4/3 \times 75$ is	less than 75	equal to 75	more than 75
$5/2 \times 45$ is	less than 45	equal to 45	more than 45
$3/4 \times 89$ is	less than 89	equal to 89	more than 89
$1/1 \times 41$ is	less than 41	equal to 41	more than 41
$1/1 \times 77$ is	less than 77	equal to 77	more than 77
$3/2 \times 35$ is	less than 35	equal to 35	more than 35

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ANSWER KEY



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$9/10 \times 46$ is	less than 46	equal to 46	more than 46
$7/8 \times 50$ is	less than 50	equal to 50	more than 50
$1/1 \times 56$ is	less than 56	equal to 56	more than 56
$4/3 \times 75$ is	less than 75	equal to 75	more than 75
$5/2 \times 45$ is	less than 45	equal to 45	more than 45
$3/4 \times 89$ is	less than 89	equal to 89	more than 89
$1/1 \times 41$ is	less than 41	equal to 41	more than 41
$1/1 \times 77$ is	less than 77	equal to 77	more than 77
$3/2 \times 35$ is	less than 35	equal to 35	more than 35

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GUIDE

① What this sheet practises

Seeing multiplication as resizing: multiplying by more than 1 makes a number bigger, by less than 1 makes it smaller, and by exactly 1 keeps it the same.

② A problem from the sheet, worked out

Bigger or smaller? Don't multiply. Is the factor more than 1, less than 1, or 1?

$4/3 \times 29$ is	less than 29	equal to 29	more than 29
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$3/4 \times 20$ is	less than 20	equal to 20	more than 20
$9/10 \times 46$ is	less than 46	equal to 46	more than 46
$7/8 \times 50$ is	less than 50	equal to 50	more than 50

How: Don't multiply. Look at the fraction: a top bigger than the bottom is more than 1, a smaller top is less than 1, and the same top and bottom is exactly 1.

③ Words to know

factor a number being multiplied

scale make bigger or smaller by multiplying

more than 1 a fraction with its top bigger than its bottom

equal to 1 the same top and bottom, like $2/2$

④ Watch for

- Thinking multiplying always makes a number bigger.
- Missing that $2/2$ is equal to 1, so $2/2 \times 49$ is just 49.
- Working out the whole product when only a comparison is needed.

⑤ Where it fits

BEFORE

5.NF.B.4

Multiply a fraction or whole number by a fraction.

THIS SHEET

5.NF.B.5

Understand multiplying as scaling something up or down.

NEXT

5.NF.B.6

Solve real-world problems multiplying fractions and mixed numbers.

⑥ Helping at home

Before cooking, ask: if we make $1/2$ of the recipe, will we need more flour or less? What about $1 1/2$ times the recipe?