Name & Surname: _____ Class: _____ Date: _____

MULTIPLYING FRACTIONS

Find a fraction of a number and a fraction of a fraction

About 45 minutes Level ★★★☆☆

How to Multiply Fractions

Think of × as **of**. Finding $\frac{1}{2} \times 12$ means finding $\frac{1}{2}$ **of** 12.

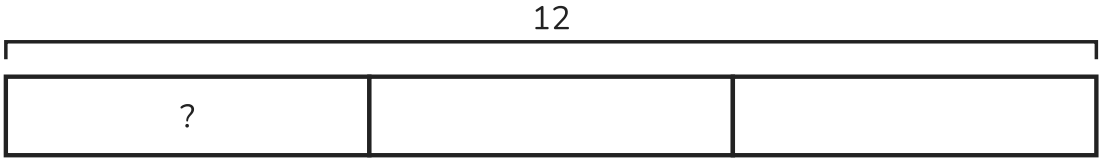
- Write any **whole number** over 1. Example: $4 = \frac{4}{1}$.
- Multiply the **numerators**, then multiply the **denominators**.
- Write the answer in **simplest form**. Example: $\frac{2}{3} \times \frac{1}{4} = \frac{2}{12} = \frac{1}{6}$.

Task A

/4

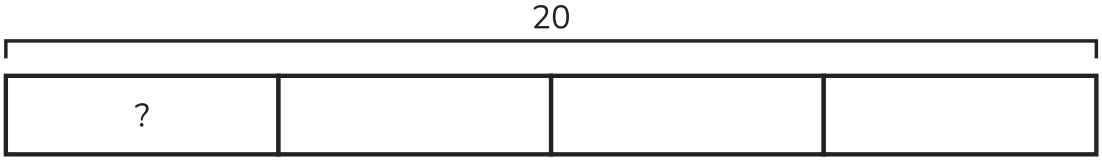
Use the bar model to find $\frac{1}{3}$ and $\frac{1}{4}$ of a total.

1 There are 12 granola bars. A student eats $\frac{1}{3}$ of them. How many bars is that?



Answer: _____ bars

2 A class has 20 markers. A student uses $\frac{1}{4}$ of them for a poster. How many markers is that?



Answer: _____ markers

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WARM UP PRACTICE

Practice multiplying with small numbers first.

Key words

numerator: the top number of a fraction

denominator: the bottom number of a fraction

product: the answer to a multiplication

simplest form: a fraction written with the smallest numbers possible

whole number: a counting number like 3 or 12

Task B

/10

Multiply across and leave each **answer** in **simplest form**.

WARM UP

1 Work out $\frac{1}{2} \times \frac{1}{4}$

Answer: _____

2 Work out $\frac{1}{3} \times \frac{1}{5}$

Answer: _____

3 Work out $4 \times \frac{1}{2}$

Answer: _____

4 Work out $3 \times \frac{2}{3}$

Answer: _____

PRACTICE

5 Work out $\frac{2}{3} \times \frac{3}{4}$

Answer: _____

6 Work out $\frac{5}{6} \times \frac{2}{3}$

Answer: _____

7 Work out $6 \times \frac{5}{6}$

Answer: _____

PROBLEM SOLVING

8 A water bottle holds 24 ounces. A student drinks $\frac{2}{3}$ of it. How many ounces is that?

Answer: _____

9 A strip of paper is $\frac{5}{6}$ foot long. A student colors $\frac{1}{2}$ of it. How long is the colored part?

Answer: _____

10 Explain how you know that $\frac{1}{2} \times \frac{2}{3}$ is less than $\frac{2}{3}$.

Answer: _____

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SPOT THE ERROR

Find the wrong step, explain it, and fix it.

Task C

/4

Find the **wrong step** in each **solution** and write the correct answer.



Student A

Work out $3 \times \frac{2}{5}$

1. $3 \times \frac{2}{5}$
2. $= \frac{3}{1} \times \frac{2}{5}$
3. $= \frac{6}{15}$
4. So the answer is $\frac{6}{15}$

The mistake is in step: _____

What went wrong?

.....

Correct answer: _____



Student B

Work out $\frac{2}{3} \times \frac{3}{4}$

1. $\frac{2}{3} \times \frac{3}{4}$
2. $= \frac{5}{7}$
3. So the answer is $\frac{5}{7}$

The mistake is in step: _____

What went wrong?

.....

Correct answer: _____

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LEVEL UP PRACTICE

Tackle harder products and real-life problems.

Task D

/10

Look for a shortcut to simplify before or after you multiply.

WARM UP

1 Work out $\frac{1}{5} \times \frac{1}{2}$

Answer: _____

2 Work out $\frac{3}{4} \times 8$

Answer: _____

3 Work out $\frac{2}{7} \times 14$

Answer: _____

4 Work out $\frac{3}{8} \times 4$

Answer: _____

PRACTICE

5 Work out $\frac{4}{5} \times \frac{5}{6}$

Answer: _____

6 Work out $\frac{7}{8} \times \frac{2}{7}$

Answer: _____

7 Work out $\frac{9}{10} \times \frac{5}{6}$

Answer: _____

PROBLEM SOLVING

8 A ribbon is 12 inches long. A student uses $\frac{5}{6}$ of it. How many inches is that?

Answer: _____

9 A ticket costs $12. A student pays $\frac{3}{4}$ of the price. How much does the student pay?

Answer: _____

10 A student says $\frac{3}{5} \times 2$ is the same as $\frac{3}{5} \times \frac{2}{5}$. Explain why the student is wrong.

Answer: _____

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SOLVE AND SHADE

Solve real-life fraction problems and work with bars.

Task E

/6

Show your working in the box and write the answer with units.

1. A pitcher holds 12 cups of lemonade. A student drinks $\frac{1}{3}$ of it. How much lemonade is that?

Working

Answer

_____ **cups**

2. A roll of ribbon is 20 inches long. A student cuts off $\frac{3}{4}$ of it for art. How long is the piece cut off?

Working

Answer

_____ **inches**

3. A book costs $20. The discount is $\frac{1}{5}$ off the price. How much is the discount?

Working

Answer

$ _____

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MULTIPLYING FRACTIONS

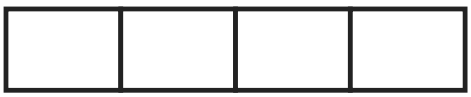
Task F

/4

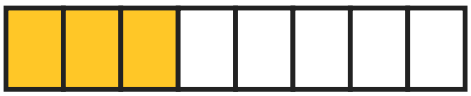
Shade, name and **compare** the **bars** to see the size of products.

1

Shade $\frac{3}{4}$



2

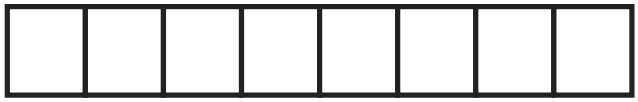


Fraction shaded: $\frac{\square}{\square}$

3



$= \frac{1}{2}$



$= \frac{\square}{8}$

4



$\frac{1}{2}$



$\frac{1}{6}$

$\frac{1}{2} \square \frac{1}{6}$ Write <, > or =

How did I do?

Circle a face for each line.

I can multiply a whole number by a fraction.

I can multiply a fraction by a fraction.

I can simplify my answer and explain my work.

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Answer sheet: Multiplying Fractions

Task A

1. 4 bars
2. 5 markers

Task B

1. $\frac{1}{8}$
2. $\frac{1}{15}$
3. 2
4. 2
5. $\frac{1}{2}$
6. $\frac{5}{9}$
7. 5
8. 16 ounces
9. $\frac{5}{12}$ foot
10. You take only half of $\frac{2}{3}$, so the result must be smaller than $\frac{2}{3}$.

Task C

1. Step 3 is wrong: They multiplied the denominator by 3 too. Only the numerator is multiplied by the whole number. Correct answer: $1\frac{1}{5}$
2. Step 2 is wrong: They added the tops and the bottoms. To multiply, multiply the numerators and multiply the denominators. Correct answer: $\frac{1}{2}$

Task D

1. $\frac{1}{10}$
2. 6
3. 4
4. $1\frac{1}{2}$
5. $\frac{2}{3}$
6. $\frac{1}{4}$
7. $\frac{3}{4}$
8. 10 inches
9. $9
10. Multiplying by 2 gives $\frac{6}{5}$, but multiplying by $\frac{2}{5}$ gives $\frac{6}{25}$, which is much smaller.

Task E

1. 4 cups (12 ÷ 3 × 1 = 4)
2. 15 inches (20 ÷ 4 × 3 = 15)
3. $4 (20 ÷ 5 × 1 = 4)

Task F

1. Shade 3 of the 4 equal parts ($\frac{3}{4}$).
2. $\frac{3}{8}$
3. $\frac{1}{2} = \frac{4}{8}$ (shade 4 parts)
4. $\frac{1}{2} > \frac{1}{6}$

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