Fractions B

Divide Whole Numbers

Multiply by Whole Numbers



Fractions as division and equal groups

Compare products with their whole-number factor

26 pages | 44 practice items | Complete worked keys

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Grade 5 Fractions B: Teacher Guide

Georgia's K-12 Mathematics Standards

5.NR.3.1

Explain the meaning of a fraction as division of the numerator by the denominator

($\frac{a}{b} = a \div b$).

Solve problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers.

5.NR.3.4

Model and solve problems involving multiplication of a fraction and a whole number.

5.NR.3.5

Explain why multiplying a whole number by a fraction greater than one results in a product greater than the whole number, and why multiplying a whole number by a fraction less than one results in a product less than the whole number and multiplying a whole number by a fraction equal to one results in a product equal to the whole number.

Page map: practice / key

3 / 15	A Fraction Means Division	3.1
4 / 16	Share More Than One Whole	3.1
5 / 17	Model Equal Shares	3.1
6 / 18	Whole-Number Division Stories	3.1
7 / 19	Multiply a Fraction by Groups	3.4
8 / 20	Multiply Beyond One	3.4
9 / 21	Models for Fraction Products	3.4
10 / 22	Predict the Product	3.5
11 / 23	Scaling in Context	3.5
12 / 24	Fraction Multiplication Stories	3.4
13 / 25	Fraction Code	3.4
14 / 26	Mixed Review	3.1; 3.4; 3.5

Equal shares: each labeled bar shows the total quantity. Group models: each row is a group and each bar is one whole. Accept equivalent fractions and mixed or improper answers; simplifying is not required.

Design bounds: divisors/denominators 2, 3, 4, 5, 6, 8, 9, 10, 12; positive whole factors 2 to 9. Scaling compares with a positive whole count. Page 13 spells GROUPS; extra T is the Spotlight.

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A Fraction Means Division

Name: _____

Write the quotient as a fraction. Explain how the total and equal shares help.

Strategy Spotlight

$11 \div 12$

Total / shares: 11/12
11/12 = 11/12
Each share has this many whole units.

Exact: $\frac{11}{12}$

1.

$2 \div 3$

Total: 2 whole units



3 equal shares; hatch = one share

Answer:

2.

$3 \div 8$

Total: 3 whole units



8 equal shares; hatch = one share

Answer:

3.

$4 \div 5$

Total: 4 whole units



5 equal shares; hatch = one share

Answer:

4.

$5 \div 9$

Total: 5 whole units



9 equal shares; hatch = one share

Answer:

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Answer Key: A Fraction Means Division

Student page 3

Write the quotient as a fraction. Explain how the total and equal shares help.

Strategy Spotlight

11 ÷ 12

Total / shares: 11/12
11/12 = 11/12
Each share has this many whole units.

Exact: $\frac{11}{12}$

1.

2 ÷ 3

Total: 2 whole units



3 equal shares; hatch = one share

Total / shares: 2/3
2/3 = 2/3
Each share has this many whole units.

$\frac{2}{3}$

2.

3 ÷ 8

Total: 3 whole units



8 equal shares; hatch = one share

Total / shares: 3/8
3/8 = 3/8
Each share has this many whole units.

$\frac{3}{8}$

3.

4 ÷ 5

Total: 4 whole units



5 equal shares; hatch = one share

Total / shares: 4/5
4/5 = 4/5
Each share has this many whole units.

$\frac{4}{5}$

4.

5 ÷ 9

Total: 5 whole units



9 equal shares; hatch = one share

Total / shares: 5/9
5/9 = 5/9
Each share has this many whole units.

$\frac{5}{9}$

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Models for Fraction Products

Name: _____

Each row is one group; each bar is one whole. Count equal parts and find the product.

Strategy Spotlight

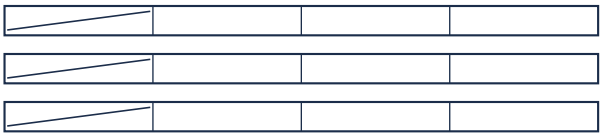
$$2 \times \frac{7}{12}$$

Each unit part is 1/12.
Parts: 2 x 7 = 14
So 14/12 = 1 1/6

Exact: $1\frac{1}{6}$

23.

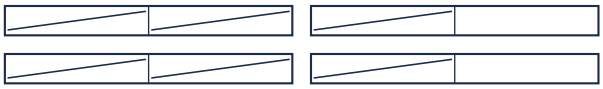
$3 \times \frac{1}{4}$



Answer:

24.

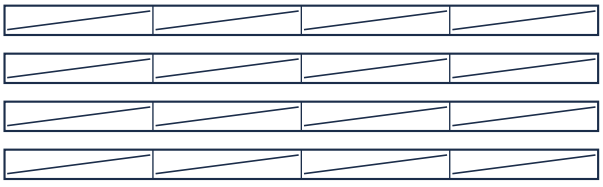
$2 \times \frac{3}{2}$



Answer:

25.

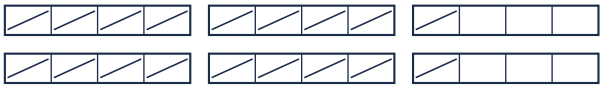
$4 \times \frac{4}{4}$



Answer:

26.

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



Answer:

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Answer Key: Models for Fraction Products

Student page 9

Each row is one group; each bar is one whole. Count equal parts and find the product.

Strategy Spotlight

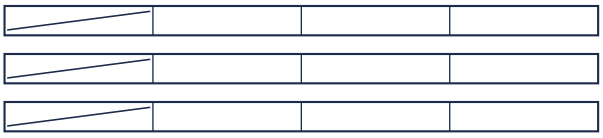
$$2 \times \frac{7}{12}$$

Each unit part is 1/12.
Parts: 2 x 7 = 14
So 14/12 = 1 1/6

Exact: $1\frac{1}{6}$

23.

$$3 \times \frac{1}{4}$$

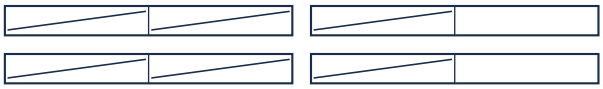


Each unit part is 1/4.
Parts: 3 x 1 = 3
So 3/4 = 3/4

$\frac{3}{4}$

24.

$$2 \times \frac{3}{2}$$

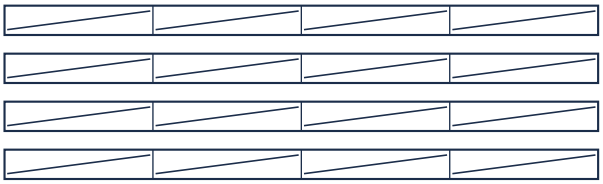


Pieces: 2 x (1 + 1/2)
= 2 + 1
= 3

3

25.

$$4 \times \frac{4}{4}$$

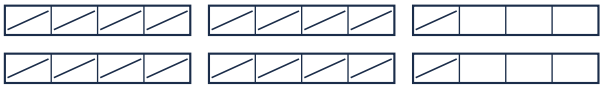


Pieces: 4 x (1 + 0)
= 4 + 0
= 4

4

26.

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



Pieces: 2 x (2 + 1/4)
= 4 + 1/2
= 4 1/2

$4\frac{1}{2}$

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