



Math 5

UNIT 5 – Multiplying and Dividing Fractions

5-2 Multiplication of Fractions and Whole Number

Name:

Date:

Common Core Standards

[CCSS.MATH.CONTENT.5.NF.B.4](#)

Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.

[CCSS.MATH.CONTENT.5.NF.B.4.A](#)

Interpret the product $(a/b) \times q$ as a parts of a partition of q into b equal parts; equivalently, as the result of a sequence of operations $a \times q \div b$. *For example, use a visual fraction model to show $(2/3) \times 4 = 8/3$, and create a story context for this equation. Do the same with $(2/3) \times (4/5) = 8/15$. (In general, $(a/b) \times (c/d) = (ac)/(bd)$).*

[CCSS.MATH.CONTENT.5.NF.B.6](#)

Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem. *pounds of rice should each person get? Between what two whole numbers does your answer lie?*

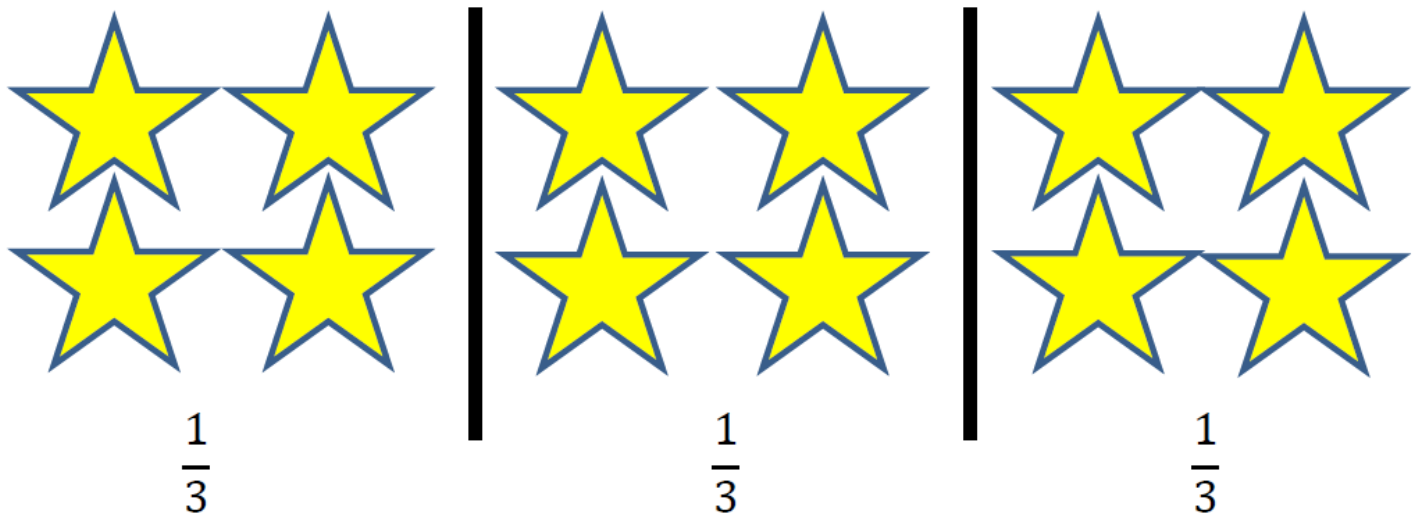


5-2 Multiplication of Fractions and Whole Number

A. Finding Fractions of a Set

Example 1: What is $\frac{1}{3}$ of 12?

Make an array of 12 shapes (of the same kind) and divide it equally into three parts.



Therefore,

$$\frac{1}{3} \text{ of } 12 = 4$$

$$\frac{2}{3} \text{ of } 12 = 8$$

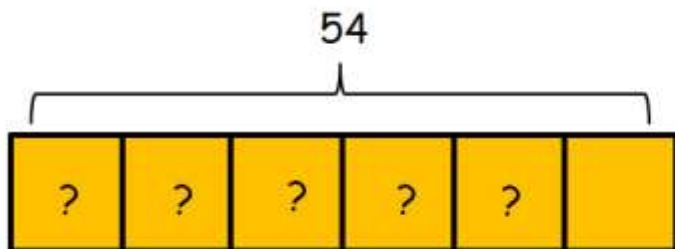
$$\frac{3}{3} \text{ of } 12 = 12$$

12 divided into 3 equal parts,
each part or group is equal to 3.

$$\frac{1}{3} \text{ of } 12 = 4$$

B. Using Tape Diagrams

Example 1: Using a tape diagram, find $\frac{5}{6}$ of 54.



$$\begin{aligned} 6 \text{ units} &= 54 \\ 1 \text{ unit} &= 54 \div 6 \\ 1 \text{ unit} &= 9 \\ \frac{1}{6} \text{ of } 54 &= 9 \end{aligned}$$

$$\begin{aligned} \text{If } 1 \text{ unit} &= 9, \text{ then:} \\ 5 \text{ units} &= 5 \times 9 \\ 5 \text{ units} &= 45 \\ \frac{5}{6} \text{ of } 54 &= 45 \end{aligned}$$

C. Multiplying Fractions and Whole Number

$$\frac{a}{b} \times \frac{c}{d} = \frac{ac}{bd}$$

Example 1: What is $\frac{3}{4}$ of 44?

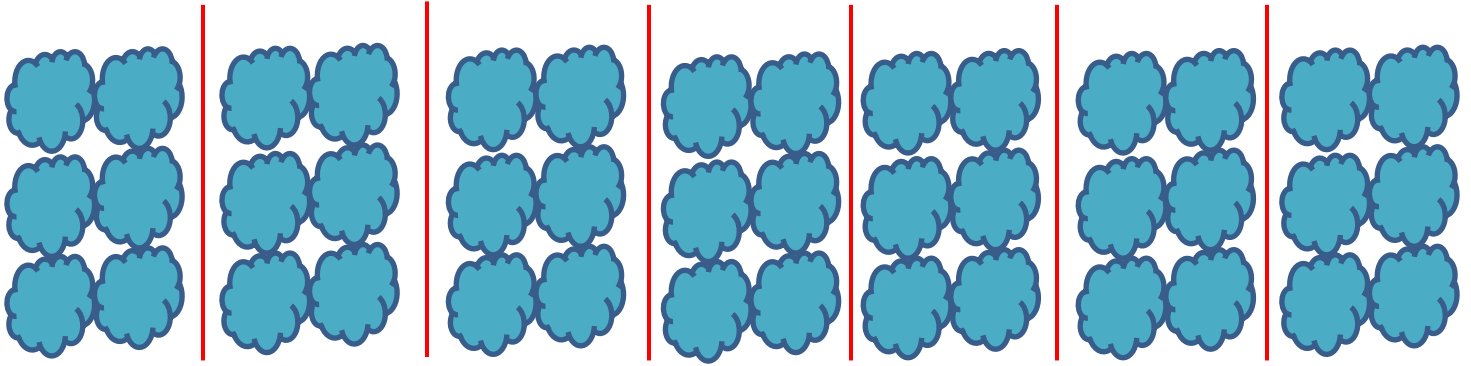
$$\begin{aligned} \frac{3}{4} \times \frac{44}{1} &= \frac{(3)(44)}{(4)(1)} \\ &= \frac{132}{4} \\ \frac{3}{4} \times \frac{44}{1} &= 33 \end{aligned}$$

or

$$\begin{aligned} \frac{3}{4} \times \frac{44}{1} &= \frac{(3)(44)}{(4)(1)} \\ &= \frac{(3)(\cancel{4})(11)}{(\cancel{4})(1)} \\ \frac{3}{4} \times \frac{44}{1} &= \frac{(3)(11)}{1} \\ &= \frac{33}{1} \\ &= 33 \end{aligned}$$

Find My Part!

Using the array of clouds, find the value of the following:



1. $\frac{1}{7}$ of 42 = ?

2. $\frac{3}{7}$ of 42 = ?

3. $\frac{4}{7}$ of 42 = ?

4. $\frac{6}{7}$ of 42 = ?

Task Cards

Multiply the following fractions and whole numbers.

1

$$\frac{2}{3} \times 18$$

A

45

2

$$\frac{3}{5} \times 75$$

B

44

3

$$\frac{4}{9} \times 36$$

c

168

4

$$\frac{4}{7} \times 77$$

D

12

5

$$\frac{5}{6} \times 132$$

E

16

6

$$\frac{8}{9} \times 189$$

F

110

ANSWER KEY

Find My Part!

1. 6
2. 18
3. 24
4. 36

Task Cards

- | | |
|----|---|
| 1. | D |
| 2. | A |
| 3. | E |
| 4. | B |
| 5. | F |
| 6. | C |