

Warm Up Grade 8

January 16, 2020

Show work and evaluate

a) $\frac{7}{5}$ of 100 = $\boxed{140}$

$\frac{1}{5}$ of 100 = 20

$\times 7$

b) $\frac{3}{4}$ of 48 = $\boxed{36}$

$\frac{1}{4}$ of 48 = 12

$\times 3$

c) $\frac{2}{2 \times 18} \text{ of } 18 = 36$

$\frac{2}{1} \text{ of } 18 = 36$

Mental Math - Lesson 29

Power Builder A

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

2. $\frac{1}{5}$ of 35 = 7

3. $\frac{1}{8}$ of 40 = 5

4. $\frac{1}{3}$ of 45 = 15

5. $\frac{1}{7}$ of 28 = 4

6. $\frac{3}{4}$ of 28 = 3×4
= 12

7. $\frac{1}{5}$ of 45 = 9

8. $\frac{2}{5}$ of 45 = 9×2
= 18

9. $\frac{1}{10}$ of 70 = 7

10. $\frac{3}{10}$ of 70 = 3×7
= 21

11. $\frac{4}{5}$ of 20

$\frac{1}{5}$ of 20 = 4

$\frac{4}{5}$ of 20 = $4 \times 4 = 16$

12. $\frac{3}{7}$ of 42

$\frac{1}{7}$ of 42 = 6

$\frac{3}{7}$ of 42 = 6×3
= 18

13. $\frac{3}{4}$ of 100

$\frac{1}{4}$ of 100 = 25

$\frac{3}{4}$ of 100 = 3×25
= 75

14. $\frac{2}{3}$ of 90

$\frac{1}{3}$ of 90 = 30

$\frac{2}{3}$ of 90 = 60

15. $\frac{3}{5}$ of 100

$\frac{1}{5}$ of 100 = 20

$\frac{3}{5}$ of 100 = 20×3
= 60

16. $\frac{5}{8}$ of 40

$\frac{1}{8}$ of 40 = 5

$\frac{5}{8}$ of 40 = $5 \times 5 = 25$

17. $\frac{2}{3}$ of 600

$\frac{1}{3}$ of 600 = 200

$\frac{2}{3}$ of 600 = 2×200
= 400

18. $\frac{3}{4}$ of 200

$\frac{1}{4}$ of 200 = 50

$\frac{3}{4}$ of 200 = 3×50
= 150

19. $\frac{4}{5}$ of 200

$\frac{1}{5}$ of 200 = 40

$\frac{4}{5}$ of 200 = 4×40
= 160

20. $\frac{2}{3}$ of 450

$\frac{1}{3}$ of 450 = 150

$\frac{2}{3}$ of 450 = 2×150
= 300

 $\frac{1}{4}$ $\frac{1}{4}$ $\frac{1}{4}$

4	4	4				
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Lesson 29 Power Builder B

1. $\frac{1}{3}$ of 15 = 5

2. $\frac{1}{5}$ of 25 = 5

3. $\frac{1}{4}$ of 40 = 10

4. $\frac{1}{8}$ of 48 = 6

5. $\frac{1}{7}$ of 35 = 5

6. $\frac{2}{7}$ of 35 = 2×5
= 10

7. $\frac{1}{3}$ of 90 = 30

8. $\frac{2}{3}$ of 90 = 2×30
= 60

9. $\frac{1}{10}$ of 60 = 6

10. $\frac{3}{10}$ of 60 = 3×6
= 18

11. $\frac{3}{4}$ of 20

12. $\frac{2}{7}$ of 28

$\frac{1}{4}$ of 20 = 5

$\frac{1}{7}$ of 28 = 4

so $\frac{3}{4}$ of 20 = 3×5
= 15

$\frac{2}{7}$ of 28 = 2×4
= 8

13. $\frac{4}{5}$ of 100

14. $\frac{3}{4}$ of 80

$\frac{1}{5}$ of 100 = 20

$\frac{1}{4}$ of 80 = 20

$\frac{4}{5}$ of 100 = 4×20
= 80

$\frac{3}{4}$ of 80 = 3×20
= 60

15. $\frac{2}{5}$ of 100

16. $\frac{3}{8}$ of 80

$\frac{1}{5}$ of 100 = 20

$\frac{1}{8}$ of 80 = 10

$\frac{2}{5}$ of 100 = 2×20
= 40

$\frac{3}{8}$ of 80 = 3×10
= 30

17. $\frac{2}{3}$ of 300

18. $\frac{3}{4}$ of 100

$\frac{1}{3}$ of 300 = 100

$\frac{1}{4}$ of 100 = 25

$\frac{2}{3}$ of 300 = 2×100
= 200

$\frac{3}{4}$ of 100 = 3×25
= 75

19. $\frac{4}{5}$ of 200

20. $\frac{2}{3}$ of 900

$\frac{1}{5}$ of 200 = 40

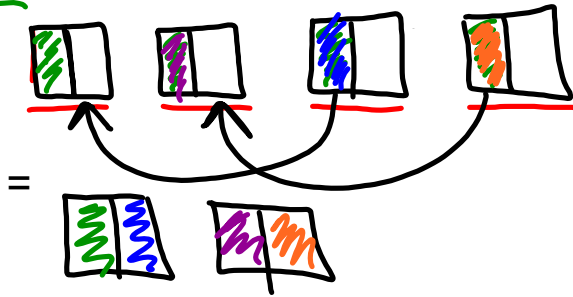
$\frac{1}{3}$ of 900 = 300

$\frac{4}{5}$ of 200 = 4×40
= 160

$\frac{2}{3}$ of 900 = 2×300
= 600

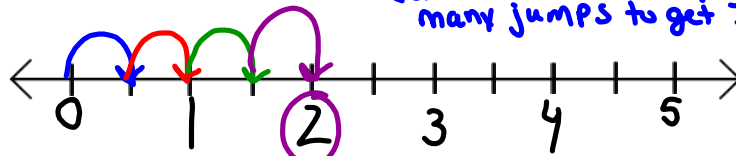
Multiplying Whole Numbers and Fractions

What does $4 \times \frac{1}{2}$ mean?
 4 groups of $\frac{1}{2}$, which we can model using rectangles.



You can also use number line
 (Count by the unit fraction)

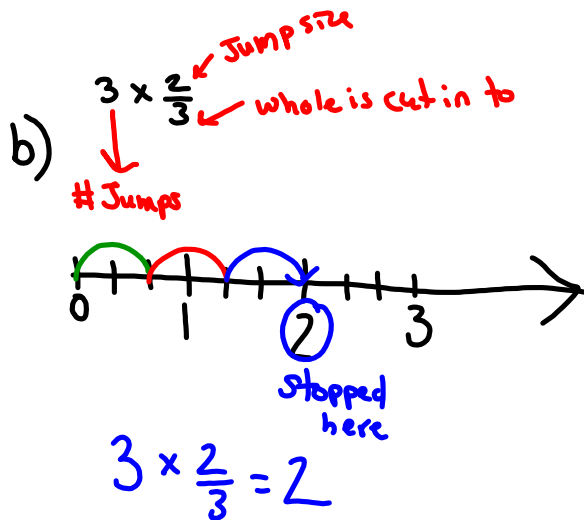
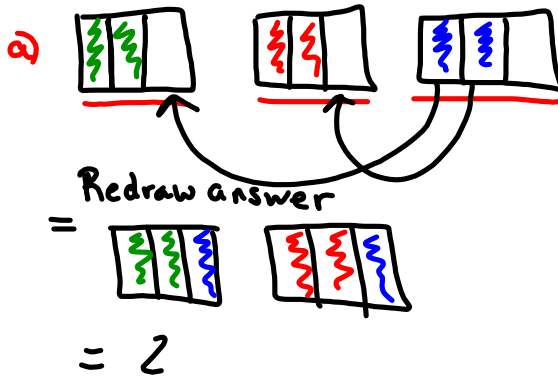
$4 \times \frac{1}{2}$ means 4 jumps of size $\frac{1}{2}$
 (denominator tells you how many jumps to get 1 whole)



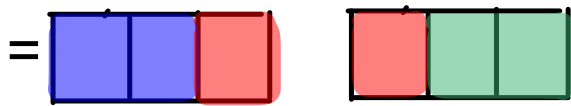
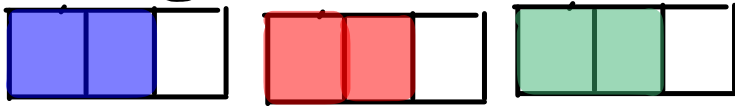
where you stop is your answer

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

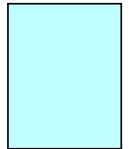
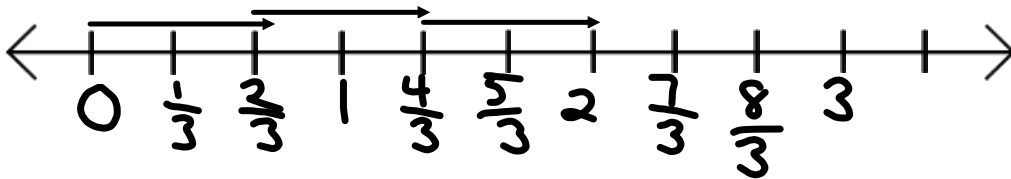
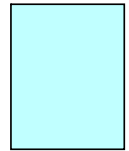
Try $3 \times \frac{2}{3}$ Model with a) rectangles
 b) number lines



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



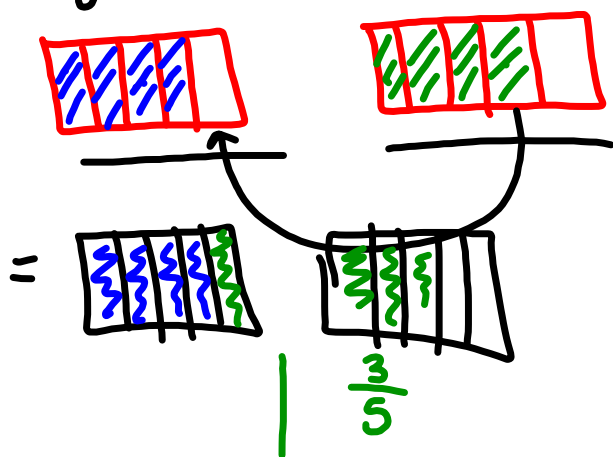
$$3 \times \frac{2}{3} = 2.$$



Try $2 \times \frac{4}{5}$

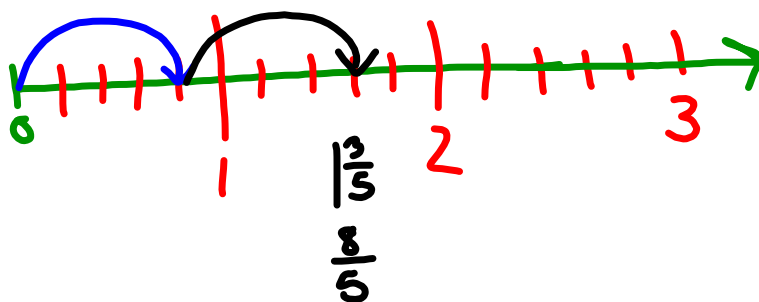
5

a) 2 groups of $\frac{4}{5}$



b) $2 \times \frac{4}{5}$

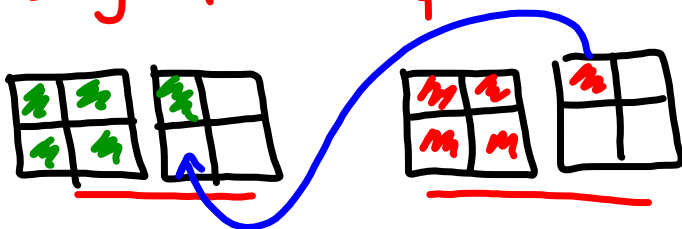
dashes in jump



a) $2 \times \frac{5}{4}$

Rectangle and # line

2 groups of $\frac{5}{4}$

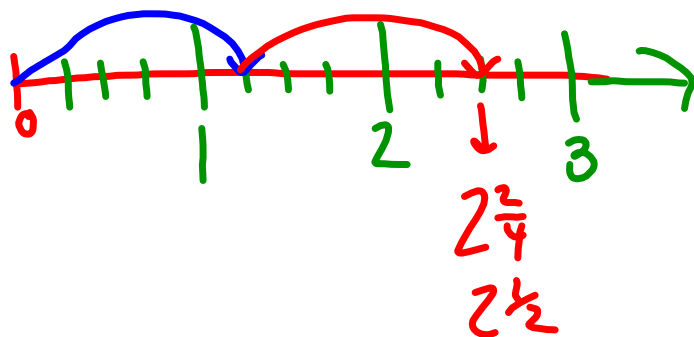


$$= \begin{array}{|c|c|} \hline 1 & 2 \\ \hline 3 & 4 \\ \hline \end{array} \begin{array}{|c|c|} \hline 3 & 4 \\ \hline 2 & 1 \\ \hline \end{array} \begin{array}{|c|c|} \hline 5 & 4 \\ \hline 3 & 2 \\ \hline \end{array}$$

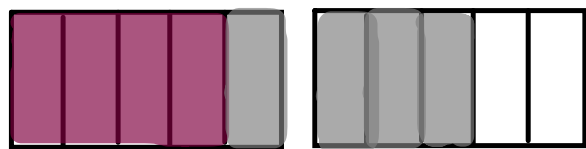
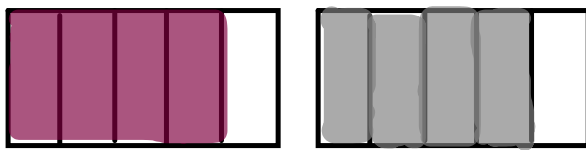
$$= 2 \frac{2}{4} = 2 \frac{1}{2}$$

$$= \frac{10}{4} = \frac{5}{2}$$

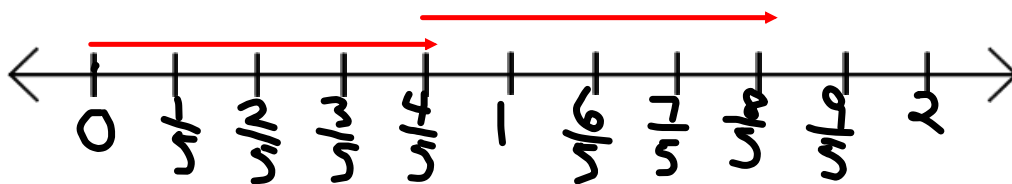
b) 2 of $\frac{5}{4}$ ← whole



$$2 \times \frac{4}{5}$$



$$2 \times \frac{4}{5} = \frac{8}{5}$$



When it ask the following...

"Write each statement as multiplication statements in two ways."

$$\frac{5}{9} \text{ of } 45$$

First way

$$\frac{5}{9} \times 45$$

Second way

$$45 \times \frac{5}{9}$$

$$\frac{1}{9} \text{ of } 45 = 5$$

$$\frac{5}{9} \text{ of } 45 = 5 \times 5 = 25$$

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use fraction rectangles since they are easier to draw

6, #7, #8a, #9(a,b), #10(a,b), #11(a,b,c)
#14(a,c), #15(a,c), ~~#16(a,c)~~, #17

↓
model

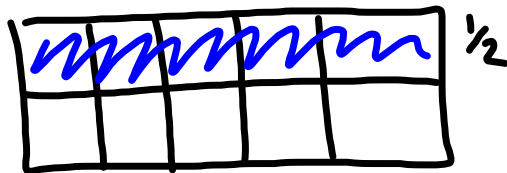
↓
don't model

~~just answer~~

$\frac{1}{2} + \frac{1}{2} + \frac{1}{2}$
 $3 \times \frac{1}{2}$

← Repeated addition

9)



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