

2/5/24 Ch. 11 (X) Unit Fractions

$$11.1 \quad \frac{1}{2} + \frac{1}{2} + \frac{1}{2} = \frac{3}{2}$$

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

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

Write the fraction as the product
of a Whole # and a unit fraction

$$\frac{5}{7} = \boxed{5} \times \boxed{\frac{1}{7}}$$

$$\frac{3}{6} = 3 \times \frac{1}{6}$$

$$\frac{12}{9} = 12 \times \frac{1}{9}$$

multiples of unit fractions

$$\frac{1}{4} : \frac{1}{4}, \frac{2}{4}, \frac{3}{4}, \frac{4}{4}$$

first 4 multiples

Skip count by
original numerator
only

$$\begin{array}{r} \textcircled{1} \frac{2}{4} \frac{3}{4} \frac{4}{4} \\ \times \quad \times \quad \times \end{array}$$

next 4 multiples

$$\frac{1}{8}, \frac{2}{8}, \frac{3}{8}, \frac{4}{8}, \frac{5}{8}$$

Ch. 11 ⊗ Fractions and Whole #s

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11.2

$$\underline{4} \times \frac{3}{6} = \boxed{\frac{12}{6}} = 2$$

Write the product as the product of a whole # and unit fraction.

$$\underline{8} \times \frac{4}{5} = \frac{32}{5} = \boxed{32} \times \boxed{\frac{1}{5}}$$

$$\underline{6} \times \frac{2}{8} = \frac{12}{8} = \boxed{12} \times \boxed{\frac{1}{8}}$$

$$\underline{12} \times \frac{5}{8} = \frac{60}{8} = \boxed{60} \times \boxed{\frac{1}{8}}$$

$$\underline{10} \times \frac{6}{7} = \frac{60}{7} = \boxed{60} \times \boxed{\frac{1}{7}}$$

multiples: AKA Skip Counting

$$\textcircled{3} : \frac{3}{7}, \frac{6}{7}, \frac{9}{7}, \frac{12}{7}, \frac{15}{7}$$

$$1\frac{2}{7}, 1\frac{5}{7}, 2\frac{1}{7}$$

first 5 multiples

$$\textcircled{5} : \frac{10}{8}, \frac{15}{8}, \frac{20}{8}, \frac{25}{8}, \frac{30}{8}$$

next 5 multiples

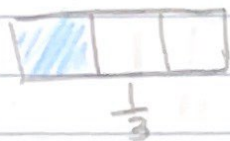
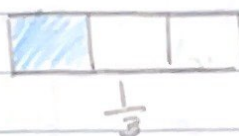
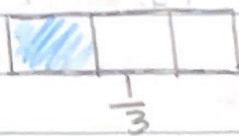
Skip count
by the numerator
den. stays
the same!

Ch. 11 Models

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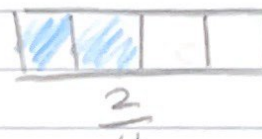
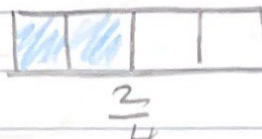
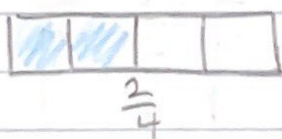
11.3

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



NEVER
EVER
⊕ Denominators!

$$3 \times \frac{2}{4} = \frac{6}{4} = 1 \frac{2}{4} = 1 \frac{1}{2}$$



$$5 \times \frac{3}{4} = \frac{15}{4} = 3 \frac{3}{4}$$

$$\begin{array}{r} 3 \frac{3}{4} \\ \times 4 \\ \hline 15 \\ -12 \\ \hline 3 \end{array}$$

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Ch. 11 Part of a Group AKA word problems

11.4

Key words for (X):

Of: groups of
rows of
packs of

with: groups with
row with

time:

for # wks

for # days

for # minutes

Fraction parts of groups

$$\frac{4}{5} \text{ of } 20 = \frac{4}{5} \times 20 = \frac{80}{5} = 16$$

$$\begin{array}{r} 16 \\ 5 \overline{) 80} \\ \underline{5} \\ 30 \\ \underline{30} \\ 0 \end{array}$$

I walked $\frac{3}{8}$ mile for 6 days.

$$\frac{3}{8} \times 6 = \frac{18}{8} = 2 \frac{2}{8} = 2 \frac{1}{4}$$

miles

$$\begin{array}{r} 2 \frac{2}{8} \\ 8 \overline{) 18} \\ \underline{16} \\ 2 \end{array}$$

11.0

Ch. 11 Whole ⊗ Mixed

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⊕ Review

11.5

$$\frac{3}{4} \times 6 = \frac{18}{4} = 4 \frac{2}{4} = 4 \frac{1}{2}$$

Diagram showing the multiplication of $\frac{3}{4}$ by 6. The fraction $\frac{3}{4}$ is multiplied by 6 to get $\frac{18}{4}$. This is simplified to $4 \frac{2}{4}$, which is further simplified to $4 \frac{1}{2}$. The final result is $4 \frac{1}{2}$.

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

$$3 \times 1 \frac{1}{4} = 3 \times \frac{5}{4} = \frac{15}{4} = 3 \frac{3}{4}$$

Diagram showing the multiplication of 3 by $1 \frac{1}{4}$. The mixed number $1 \frac{1}{4}$ is converted to the fraction $\frac{5}{4}$. The multiplication is shown as $3 \times \frac{5}{4} = \frac{15}{4}$, which is then converted back to the mixed number $3 \frac{3}{4}$.

$$3 \times 1 \frac{1}{4} = 3 \times \frac{5}{4} = \frac{15}{4} = 3 \frac{3}{4}$$

$$4 \times 3 \frac{4}{5} =$$

$$4 \times (3 + \frac{4}{5}) = 4 \times 3 + 4 \times \frac{4}{5} = 12 + \frac{16}{5} = 12 \frac{3}{5}$$

Diagram showing the multiplication of 4 by $3 \frac{4}{5}$. The mixed number $3 \frac{4}{5}$ is converted to the fraction $\frac{19}{5}$. The multiplication is shown as $4 \times \frac{19}{5} = \frac{76}{5}$, which is then converted back to the mixed number $15 \frac{1}{5}$.

m

$$5 \times 10 \frac{3}{8} =$$

5	10 5×10 50	$\frac{3}{8}$ $5 \times \frac{3}{8}$ $\frac{15}{8}$	$50 \frac{15}{8}$
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$$\begin{array}{r} 1 \frac{7}{8} \\ 8 \overline{) 15} \\ \underline{-8} \\ 7 \end{array}$$

$$50 + 1 \frac{7}{8} = 51 \frac{7}{8}$$

$$6 \frac{2}{3} \times 7 =$$

7	6 7×6 42	$\frac{2}{3}$ $7 \times \frac{2}{3}$ $\frac{14}{3}$	$42 \frac{14}{3}$
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$$\begin{array}{r} 4 \frac{2}{3} \\ 3 \overline{) 14} \\ \underline{-12} \\ 2 \end{array}$$

$$42 + 4 \frac{2}{3} = 46 \frac{2}{3}$$

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Ch. 11 Review

$$5 \times 6 \frac{7}{8} =$$

5 | 5×6
30

7 | $5 \times \frac{7}{8}$
 $\frac{35}{8}$

$30 \frac{35}{8} =$

$$30 + 4\frac{3}{8} = 34\frac{3}{8}$$

$$\begin{array}{r} 4\frac{3}{8} \\ \times 4\frac{3}{8} \\ \hline 35 \\ -32 \\ \hline 3 \end{array}$$

$$\frac{27}{3} \times 18 = \frac{486}{3} = 162$$

$$\begin{array}{r} \cancel{27} \\ 27 \\ \times 18 \\ \hline 216 \\ + 270 \\ \hline 486 \end{array}$$

	10	8	
20	200	160	7 360
7	70	56	+ 126
			<u>486</u>

$$\begin{array}{r} 162 \\ 3 \overline{) 486} \\ \underline{-36} \\ 18 \\ \underline{-18} \\ 0 \end{array}$$

Product of a whole# and unit fraction

$$\frac{7}{12} = \boxed{7} \times \boxed{\frac{1}{12}}$$

$$12 \times \frac{3}{4} = \frac{36}{4} = \boxed{36} \times \boxed{\frac{1}{4}}$$

multiples

$$\frac{\textcircled{4}}{7}, \frac{8}{7}, \frac{12}{7}, \frac{16}{7}$$

$$\frac{\textcircled{1}}{12}, \frac{2}{12}, \frac{3}{12}, \frac{4}{12}$$