

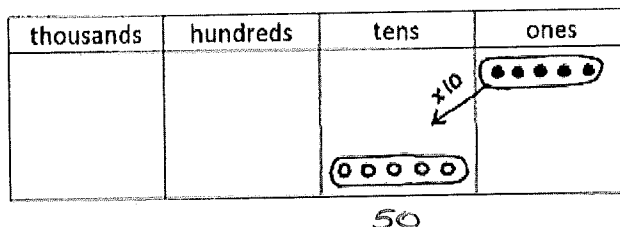
Name \_\_\_\_\_

Date \_\_\_\_\_

Example:

$$5 \times 10 = \underline{50}$$

$$5 \text{ ones} \times 10 = \underline{5 \text{ tens}}$$

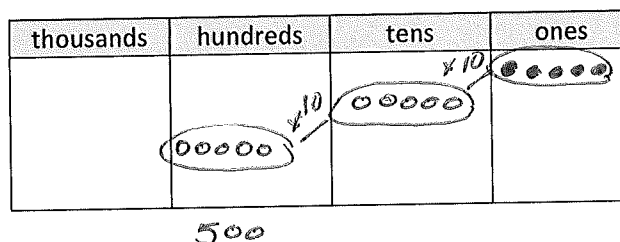


Draw number disks and arrows as shown to represent each product.

1.  $5 \times 100 = \underline{500}$

$$5 \times 10 \times 10 = \underline{500}$$

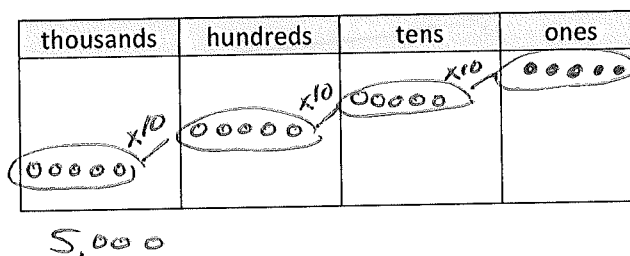
$$5 \text{ ones} \times 100 = \underline{5 \text{ hundreds}}$$



2.  $5 \times 1,000 = \underline{5,000}$

$$5 \times 10 \times 10 \times 10 = \underline{5,000}$$

$$5 \text{ ones} \times 1,000 = \underline{5 \text{ thousands}}$$



3. Complete the following equations.

a.  $6 \times 10 = \underline{60}$

b.  $\underline{100} \times 6 = 600$

c.  $6,000 = \underline{6} \times 1,000$

d.  $10 \times 4 = \underline{40}$

e.  $4 \times \underline{100} = 400$

f.  $\underline{1,000} \times 4 = 4,000$

g.  $1,000 \times 9 = \underline{9,000}$

h.  $\underline{90} = 10 \times 9$

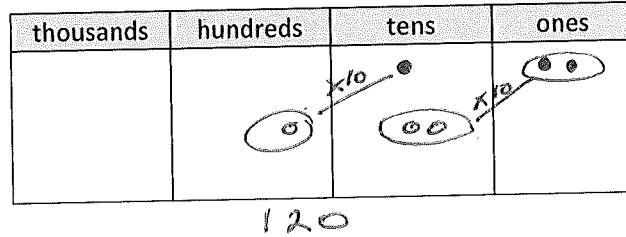
i.  $900 = \underline{9} \times 100$

*I did my work in the chart first, wrote down what I ended up with and then filled in the equations thinking about how they connected to the chart.*

Draw number disks and arrows as shown to represent each product.

4.  $12 \times 10 = \underline{120}$

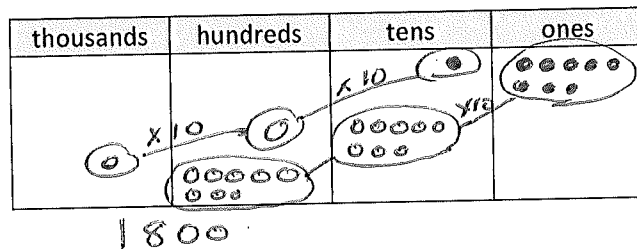
$(1 \text{ ten } 2 \text{ ones}) \times 10 = \underline{12 \text{ tens}}$



5.  $18 \times 100 = \underline{1800}$

$18 \times 10 \times 10 = \underline{1800}$

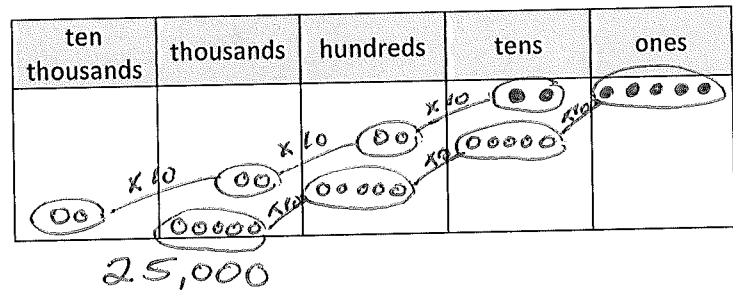
$(1 \text{ ten } 8 \text{ ones}) \times 100 = \underline{18 \text{ hundreds}}$



6.  $25 \times 1,000 = \underline{25,000}$

$25 \times 10 \times 10 \times 10 = \underline{25,000}$

$(2 \text{ tens } 5 \text{ ones}) \times 1,000 = \underline{25 \text{ thousands}}$



Decompose each multiple of 10, 100, or 1,000 before multiplying.

7.  $3 \times 40 = 3 \times 4 \times \underline{10}$   
 $= 12 \times \underline{10}$   
 $= \underline{120}$

8.  $3 \times 200 = 3 \times \underline{2} \times \underline{100}$   
 $= \underline{6} \times \underline{100}$   
 $= \underline{600}$

9.  $4 \times 4,000 = \underline{4} \times \underline{4} \times \underline{1,000}$   
 $= \underline{16} \times \underline{1,000}$   
 $= \underline{16,000}$

10.  $5 \times 4,000 = \underline{5} \times \underline{4} \times \underline{1,000}$   
 $= \underline{20} \times \underline{1,000}$   
 $= \underline{20,000}$

Name \_\_\_\_\_

Date \_\_\_\_\_

1. Complete the following equations.

a.  $5 \times 10 = \underline{50}$

b.  $\underline{100} \times 5 = 500$

c.  $5,000 = \underline{5} \times 1,000$

d.  $10 \times 2 = \underline{20}$

e.  $\underline{200} \times 20 = 2,000$

f.  $2,000 = 10 \times \underline{200}$

g.  $100 \times 18 = \underline{1800}$

h.  $\underline{320} = 10 \times 32$

i.  $4,800 = \underline{48} \times \overset{100}{1,000}$

j.  $60 \times 4 = \underline{240}$

k.  $5 \times 600 = \underline{3000}$

l.  $8,000 \times 5 = \underline{40,000}$



Lesson 4:

Date:

Interpret and represent patterns when multiplying by 10, 100, and 1,000 in arrays and numerically.  
8/28/13

engage<sup>ny</sup>

3.B.11

Name \_\_\_\_\_

Date \_\_\_\_\_

Example:

$$5 \times 10 = \underline{50}$$

$$5 \text{ ones} \times 10 = \underline{5 \text{ tens}}$$

thousands	hundreds	tens	ones

Draw number disks and arrows as shown to represent each product.

1.  $7 \times 100 = \underline{700}$

$$7 \times 10 \times 10 = \underline{700}$$

$$7 \text{ ones} \times 100 = \underline{7 \text{ hundreds}}$$

thousands	hundreds	tens	ones

700

2.  $7 \times 1,000 = \underline{7,000}$

$$7 \times 10 \times 10 \times 10 = \underline{7,000}$$

$$7 \text{ ones} \times 1,000 = \underline{7 \text{ thousand}}$$

thousands	hundreds	tens	ones

7,000

3. Complete the following equations.

a.  $8 \times 10 = \underline{80}$

b.  $\underline{100} \times 8 = 800$

c.  $8,000 = \underline{8} \times 1,000$

d.  $10 \times 3 = \underline{30}$

e.  $3 \times \underline{1000} = 3,000$

f.  $\underline{100} \times 3 = 300$

g.  $1,000 \times 4 = \underline{4000}$

h.  $\underline{40} = 10 \times 4$

i.  $400 = \underline{4} \times 100$

Draw number disks and arrows as shown to represent each product.

4.  $15 \times 10 = \underline{150}$

(1 ten 5 ones)  $\times 10 = \underline{15 \text{ tens}}$

thousands	hundreds	tens	ones

150

5.  $17 \times 100 = \underline{1700}$

$17 \times 10 \times 10 = \underline{1700}$

(1 ten 7 ones)  $\times 100 = \underline{17 \text{ hundreds}}$

thousands	hundreds	tens	ones

1700

6.  $36 \times 1,000 = \underline{36,000}$

$36 \times 10 \times 10 \times 10 = \underline{36,000}$

(3 tens 6 ones)  $\times 1,000 = \underline{36 \text{ thousands}}$

ten thousands	thousands	hundreds	tens	ones

36,000

Decompose each multiple of 10, 100, or 1,000 before multiplying.

7.  $2 \times 80 = 2 \times 8 \times \underline{10}$

$= 16 \times \underline{10}$

$= \underline{160}$

9.  $5 \times 5,000 = \underline{5 \times 5 \times 1,000}$

$= \underline{25 \times 1,000}$

$= \underline{25,000}$

8.  $2 \times 400 = 2 \times \underline{4 \times 100}$

$= \underline{8 \times 100}$

$= \underline{800}$

10.  $7 \times 6,000 = \underline{7 \times 6 \times 1,000}$

$= \underline{42 \times 1,000}$

$= \underline{42,000}$


Name \_\_\_\_\_

Date \_\_\_\_\_

Draw number disks to represent the value of the following expressions.

1.  $2 \times 3 = \underline{6}$


2 times 3 ones is 6 ones.

hundreds	tens	ones
		

$$\begin{array}{r} 2 \\ \times 3 \\ \hline 6 \end{array}$$

2.  $2 \times 30 = \underline{60}$

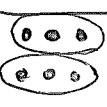
2 times 3 tens is 6 tens.

hundreds	tens	ones
		

$$\begin{array}{r} 30 \\ \times 2 \\ \hline 60 \end{array}$$

3.  $2 \times 300 = \underline{600}$


2 times 3 hundreds is 6 hundreds.

hundreds	tens	ones
		

$$\begin{array}{r} 300 \\ \times 2 \\ \hline 600 \end{array}$$

4.  $2 \times 3,000 = \underline{6,000}$

2 times 3 thousands is 6 thousands

thousands	hundreds	tens	ones
			

$$\begin{array}{r} 3,000 \\ \times 2 \\ \hline 6,000 \end{array}$$



COMMON  
CORE

Lesson 5:  
Date:

Multiply multiples of 10, 100, and 1,000 by single digits, recognizing patterns.  
8/28/13

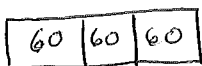
engage<sup>ny</sup>

3.B.19

5. Find the product.

a. $20 \times 7 =$ $2 \text{ tens} \times 7 = 14 \text{ tens}$ $= 140$	b. $3 \times 60 =$ $3 \times 6 \text{ tens} = 18 \text{ tens}$ $= 180$	c. $3 \times 400 =$ $3 \times 4 \text{ hundreds} =$ $12 \text{ hundreds}$ $= 1200$	d. $2 \times 800 =$ $2 \times 8 \text{ hundreds} =$ $16 \text{ hundreds}$ $= 1,600$
e. $7 \times 30 =$ $7 \times 3 \text{ tens} = 21 \text{ tens}$ $= 210$	f. $60 \times 6 =$ $6 \text{ tens} \times 6 =$ $36 \text{ tens}$ $= 360$	g. $400 \times 4 =$ $4 \text{ hundreds} \times 4 =$ $16 \text{ hundreds}$ $= 1,600$	h. $4 \times 8,000 =$ $4 \times 8 \text{ thousands} =$ $32 \text{ thousands}$ $= 32,000$
i. $5 \times 30 =$ $5 \times 3 \text{ tens} =$ $15 \text{ tens}$ $= 150$	j. $5 \times 60 =$ $5 \times 6 \text{ tens} =$ $30 \text{ tens}$ $= 300$	k. $5 \times 400 =$ $5 \times 4 \text{ hundreds} =$ $20 \text{ hundreds}$ $= 2,000$	l. $8,000 \times 5 =$ $8 \text{ thousands} \times 5 =$ $40 \text{ thousands}$ $= 40,000$

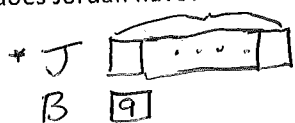
6. Brianna buys 3 packs of balloons for a party. Each pack has 60 balloons. How many balloons does Brianna have?



$$3 \times 6 \text{ tens} = 18 \text{ tens} = 180$$

She has 180 balloons

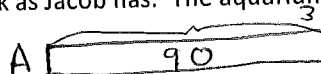
7. Jordan has twenty times as many baseball cards as his brother. His brother has 9 cards. How many cards does Jordan have?



$$9 \times 2 \text{ tens} = 18 \text{ tens} = 180$$

Jordan has 180 cards.

8. The aquarium has 30 times as many fish in one tank as Jacob has. The aquarium has 90 fish. How many fish does Jacob have?



J

$$3 \times 30 = 90$$

$$3 \times 3 \text{ tens} = 9 \text{ tens} = 90$$

Jacob has 3 fish.

Note - This problem has a complex structure. Jacob's fish  $\times 30 = 90$   
 $\rightarrow \times 3 \times 10 = 90$   
 missing number is 3

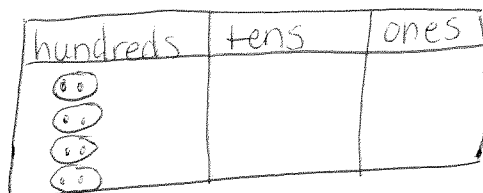
Name \_\_\_\_\_

Date \_\_\_\_\_

Draw number disks to represent the value of the following expressions.

1.  $4 \times 200 = 800$

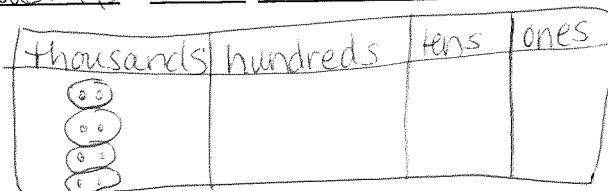
4 times 2 hundreds is 8 hundreds.



$$\begin{array}{r} 200 \\ \times 4 \\ \hline 800 \end{array}$$

2.  $4 \times 2,000 = 8,000$

4 times 2 thousands is 8 thousands.



$$\begin{array}{r} 2,000 \\ \times 4 \\ \hline 8,000 \end{array}$$

3. Find the product.

a. $30 \times 3 =$ $3 \text{ tens} \times 3 = 9 \text{ tens}$ $= 90$	b. $8 \times 20 =$ $8 \times 2 \text{ tens} = 16 \text{ tens}$ $= 160$	c. $6 \times 400 =$ $6 \times 4 \text{ hundreds} =$ $= 24 \text{ hundreds}$ $= 2,400$	d. $2 \times 900 =$ $2 \times 9 \text{ hundreds} =$ $= 18 \text{ hundreds}$ $= 1,800$
e. $8 \times 80 =$ $8 \times 8 \text{ tens} = 64 \text{ tens}$ $= 640$	f. $30 \times 4 =$ $3 \text{ tens} \times 4 =$ $= 12 \text{ tens}$ $= 120$	g. $500 \times 6 =$ $5 \text{ hundreds} \times 6$ $= 30 \text{ hundreds}$ $= 3,000$	h. $8 \times 5,000 =$ $8 \times 5 \text{ thousands} =$ $= 40 \text{ thousands}$ $= 40,000$

4. Bonnie worked for 7 hours each day for 30 days. How many hours did she work altogether?



$$\begin{array}{l} 7 \times 3 \text{ tens} \\ = 21 \text{ tens} \\ = 210 \text{ Hours} \end{array}$$

Bonnie's hours  $\times$  30 days =

$$\begin{array}{r} 7 \text{ hours} \times 30 \text{ days} = 210 \text{ hours} \\ 7 \times 3 \text{ tens} = 21 \text{ tens} \\ 21 \text{ tens} = 210 \text{ hours} \end{array}$$

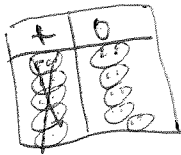


Name \_\_\_\_\_

Date \_\_\_\_\_

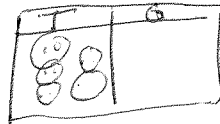
Draw number disks to represent the value of the following expressions.

1.  $5 \times 2 = 10$

5 times 2 ones is 10 ones.

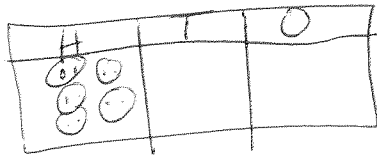
$$\begin{array}{r} 2 \\ \times 5 \\ \hline 10 \end{array}$$

2.  $5 \times 20 = 100$

5 times 2 tens is 10 tens.

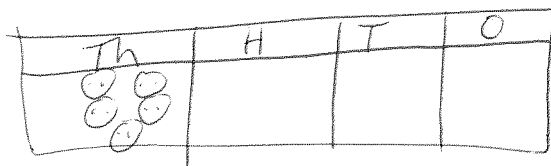
$$\begin{array}{r} 20 \\ \times 5 \\ \hline 100 \end{array}$$

3.  $5 \times 200 = 1,000$

5 times 2 hundreds is 10 hundreds.

$$\begin{array}{r} 200 \\ \times 5 \\ \hline 1,000 \end{array}$$

4.  $5 \times 2,000 = 10,000$

5 times 2 thousands is 10 thousands.

$$\begin{array}{r} 2,000 \\ \times 5 \\ \hline 10,000 \end{array}$$



Name \_\_\_\_\_

Date \_\_\_\_\_

Represent the following problem by drawing disks in the place value chart.

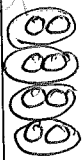


1. To solve  $20 \times 40$ , think:

$$(2 \text{ tens} \times 4) \times 10 = \underline{800}$$

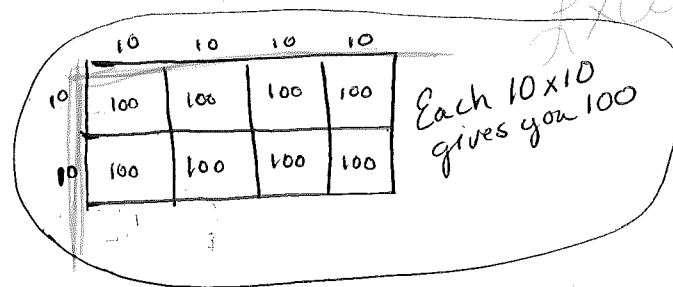
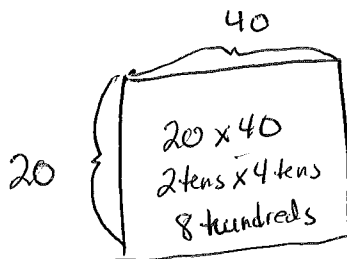
$$20 \times (4 \times 10) = \underline{800}$$

$$20 \times 40 = \underline{800}$$

ten  $\times$  10 = hundred.

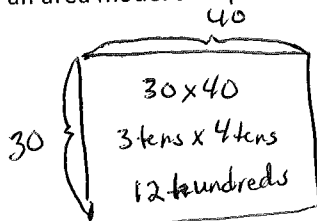
Hundreds	Tens	Ones
		

2. Draw an area model to represent  $20 \times 40$ .



$$2 \text{ tens} \times 4 \text{ tens} = \underline{8 \text{ hundreds}}$$

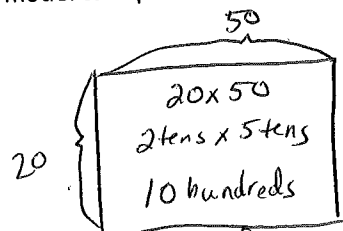
3. Draw an area model to represent  $30 \times 40$ .



$$3 \text{ tens} \times 4 \text{ tens} = \underline{12 \text{ hundreds}}$$

$$30 \times 40 = \underline{1200}$$

4. Draw an area model to represent  $20 \times 50$ .



$2 \text{ tens} \times 5 \text{ tens} = 10 \text{ hundreds}$

$20 \times 50 = 1,000$

Rewrite each equation in unit form and solve.

5.  $20 \times 20 = 400$  ← put into standard form second.

$2 \text{ tens} \times 2 \text{ tens} = 4 \text{ hundreds}$   
← solve this first

6.  $60 \times 20 = 1,200$

$6 \text{ tens} \times 2 \text{ tens} = 12 \text{ hundreds}$

7.  $70 \times 20 = 1,400$

$7 \text{ tens} \times 2 \text{ tens} = 14 \text{ hundreds}$

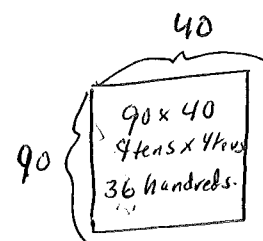
8.  $70 \times 30 = 2,100$

$7 \text{ tens} \times 3 \text{ tens} = 21 \text{ hundreds}$

9. If there are 40 seats per row, how many seats are in 90 rows?

$40 \times 90 =$   
 $4 \text{ tens} \times 9 \text{ tens} =$   
 $36 \text{ hundreds}$

3,600 seats in 90 rows



10. One ticket to the symphony costs \$50. How much money is collected if 80 tickets are sold?

$50 \times 80$   
 $= 5 \text{ tens} \times 8 \text{ tens}$   
 $= 40 \text{ hundreds}$   
 $= 4,000$

80 tickets cost \$4,000.

Name \_\_\_\_\_

Date \_\_\_\_\_

Represent the following problem by drawing disks in the place value chart.

1. To solve  $20 \times 30$ , think:

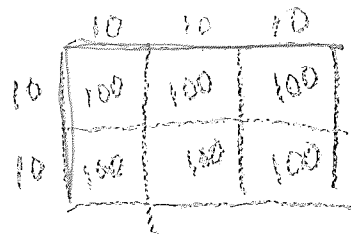
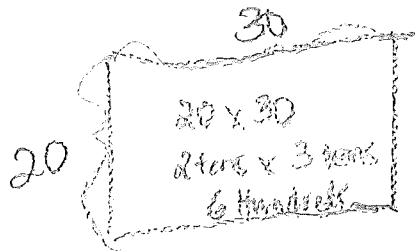
$$(2 \text{ tens} \times 3) \times 10 = \underline{600}$$

$$20 \times (3 \times 10) = \underline{600}$$

$$20 \times 30 = \underline{600}$$

Hundreds	Tens	Ones
6	0	0

2. Draw an area model to represent  $20 \times 30$ .



\* this is Nice  
to see how  
tens x tens = hundreds

$$2 \text{ tens} \times 3 \text{ tens} = \underline{6 \text{ hundreds}}$$

Reminder: Solve Area Length  $\times$  Width  
so don't label all sides with 10!

3. Every night, Eloise reads 40 pages. How many pages total does she read at night during the 30 days of November?

