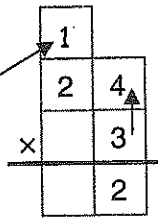


Jane uses a chart to multiply 3×24 :

Step 1

She multiplies 4 ones by 3 ($4 \times 3 = 12$).

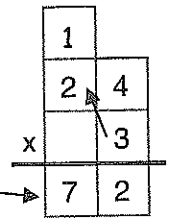
She regroupes 10 ones as 1 ten.



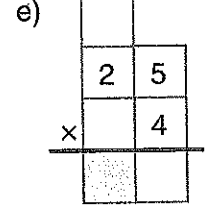
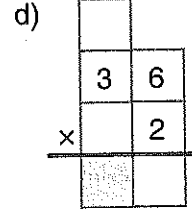
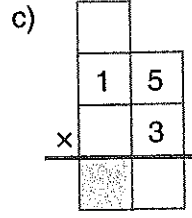
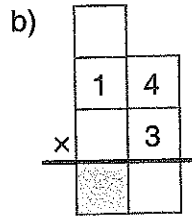
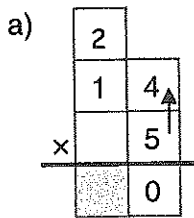
Step 2

She multiplies 2 tens by 3 ($3 \times 2 \text{ tens} = 6 \text{ tens}$).

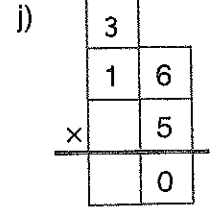
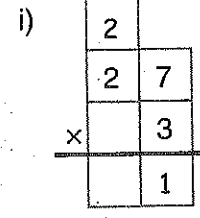
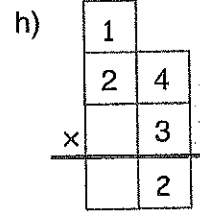
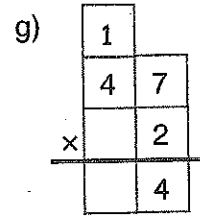
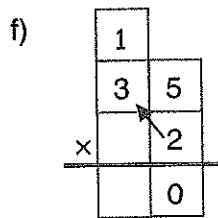
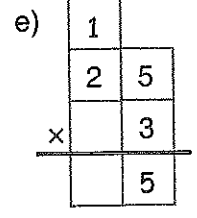
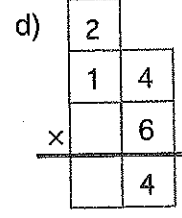
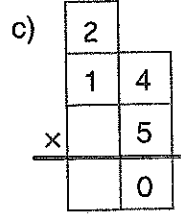
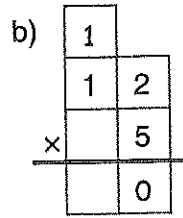
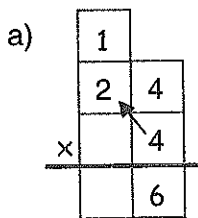
She adds 1 ten to the result ($6 + 1 = 7 \text{ tens}$):



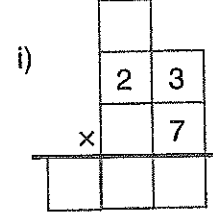
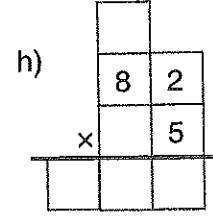
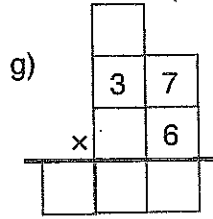
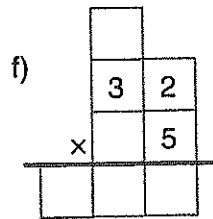
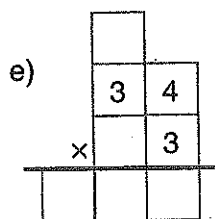
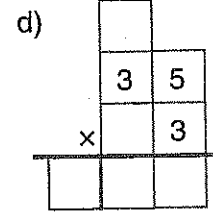
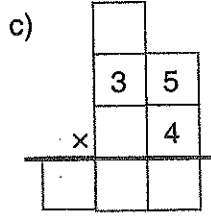
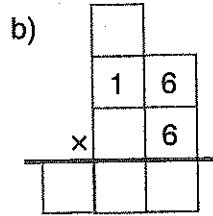
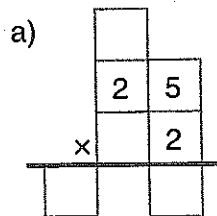
1. Using Jane's method, complete the first step of the multiplication. The first one has been done.



2. Using Jane's method, complete the second step of the multiplication.



3. Using Jane's method, complete the first and second step of the multiplication.



TEACHER:
Be sure to give your students extra practice at this skill.

NS4-36: Multiplying a 3-Digit by a 1-Digit Number

Kim multiplies 2×213 in 3 different ways.

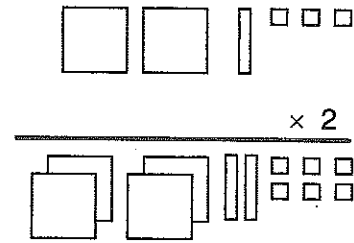
1. With a chart:

	hundreds	tens	ones
	2	1	3
\times			2
	4	2	6

2. In expanded form:

$$\begin{array}{r}
 200 + 10 + 3 \\
 \times 2 \\
 \hline
 = 400 + 20 + 6 \\
 = 426
 \end{array}$$

3. With base ten materials:



1. Rewrite the multiplication statement in expanded notation. Then perform the multiplication.

a) 321×3

$$\begin{array}{r}
 \underline{\quad\quad\quad} + \underline{\quad\quad\quad} + \underline{\quad\quad\quad} \\
 \times 3 \\
 \hline
 = \underline{\quad\quad\quad} + \underline{\quad\quad\quad} + \underline{\quad\quad\quad} \\
 = \underline{\quad\quad\quad}
 \end{array}$$

b) 432×2

$$\begin{array}{r}
 \underline{\quad\quad\quad} + \underline{\quad\quad\quad} + \underline{\quad\quad\quad} \\
 \times 2 \\
 \hline
 = \underline{\quad\quad\quad} + \underline{\quad\quad\quad} + \underline{\quad\quad\quad} \\
 = \underline{\quad\quad\quad}
 \end{array}$$

2. Multiply.

a)

1	2	4
\times		2

b)

2	1	3
\times		3

c)

1	2	2
\times		4

d)

3	2	3
\times		3

e)

4	1	3
\times		2

3. Multiply by regrouping ones as tens.

a)

1	2	3
\times		4

b)

3	2	5
\times		3

c)

1	1	4
\times		5

d)

3	1	6
\times		2

e)

1	1	2
\times		6

4. Multiply by regrouping tens as hundreds. In the last question, you will also regroup ones as tens.

a)

2	4	1
\times		4

b)

1	5	1
\times		5

c)

2	4	2
\times		3

d)

1	5	2
\times		3

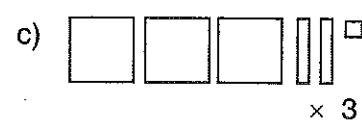
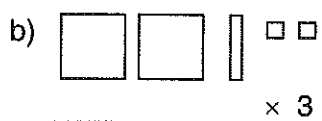
e)

2	5	4
\times		3


5. Multiply.

- a) 4×242 b) 5×312 c) 7×123 d) 8×314 e) 9×253 f) 6×241

6. Draw a picture to show the result of the multiplication.



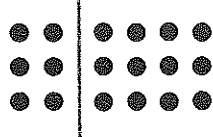
1. Fill in the blanks.

a) 

$$3 \times 2 + 3 \times 1$$

$$= 3 \times (2 + 1)$$

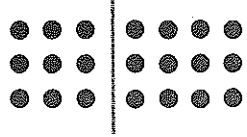
$$= 3 \times 3$$

b) 

$$3 \times \underline{\quad} + 3 \times \underline{\quad}$$

$$= 3 \times (\underline{\quad} + \underline{\quad})$$

$$= 3 \times \underline{\quad}$$

c) 

$$3 \times \underline{\quad} + 3 \times \underline{\quad}$$

$$= 3 \times (\underline{\quad} + \underline{\quad})$$

$$= 3 \times \underline{\quad}$$

d) $3 \times 5 + 3 \times 4$
 $= 3 \times (5 + 4)$
 $= 3 \times 9$

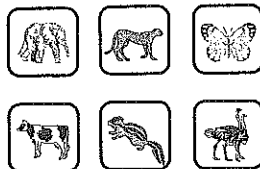
e) $3 \times 2 + 3 \times 6$
 $= 3 \times (\underline{\quad} + \underline{\quad})$
 $= 3 \times \underline{\quad}$

f) $7 \times 4 + 7 \times 3$
 $= 7 \times (\underline{\quad} + \underline{\quad})$
 $= 7 \times \underline{\quad}$

2. a) Kyle:



Rema:

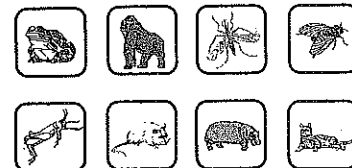


Rema has times as many stickers as Kyle.

b) Sam:



Ravi:



Ravi has times as many stickers as Sam.

3. Find the missing numbers.

a)

		5
x		4
1	4	

b)

		4
x		3
1	0	

c)

		7
x		5
4	3	

d)

		4
x		6
5	0	

4. Fill in the numbers 3, 4, 5 to make ...

a) the greatest product:

$$\square \square \times \square$$

b) the least product:

$$\square \square \times \square$$

5. Find.

a) $0 \times 5 = \underline{\quad}$

b) $0 \times 7 = \underline{\quad}$

c) $0 \times 9 = \underline{\quad}$

d) $17 \times 0 = \underline{\quad}$

6. Eschi multiplied a number by 5 and got 0. What was the original number?

Show your work for these questions in your notebook.

1. An octopus has 240 suckers on each arm. How many suckers does an octopus have?



2. A glass holds 176 millilitres of water. How many millilitres are needed to fill 6 glasses?

3. On average, every North American uses 240 litres of water each day.
 a) About how much water does each North American use in a week?
 b) About how much water would a family of 4 use in a day?

4. The **product** of 3 and 2 is 6 ($3 \times 2 = 6$).
 The **sum** of 3 and 2 is 5 ($3 + 2 = 5$).
 Which is greater: the **sum** or the **product**?

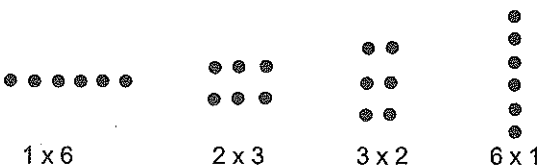
5. Try finding the **sum** and the **product** of different pairs of numbers.
 (For instance, try 3 and 4, 2 and 5, 5 and 6, 1 and 7.)
 What do you notice? Is the product always greater than the sum?

6. Kyle multiplied two numbers. The product was one of the numbers. What was the other number?

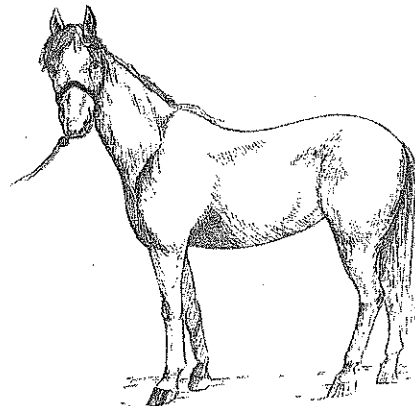
7. Write all the pairs of numbers you can think of that multiply to give 20.
 (For an extra challenge, find all pairs of numbers that multiply to give 40.)

8. An insect called a cicada can burrow into the ground and stay there for 10 years.
 a) How many months can a cicada stay in the ground?
 b) Cicadas have been known to stay in the ground for 20 years. How can you use your answer in a) to find out how many months this is?

9. There are 4 ways to put 6 dots into rows so that each row contains the same number of dots.



10. Roger rode a horse around a six-sided field with each side 325 m long.
 How far did he ride?



How many ways can you put the following number of dots into one or more equal rows?

Write a multiplication statement for each array.

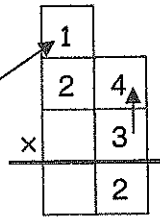
- a) 4 dots?
- b) 8 dots?
- c) 12 dots?
- d) 16 dots?

Jane uses a chart to multiply 3×24 :

Step 1:

She multiplies 4 ones by 3
($4 \times 3 = 12$).

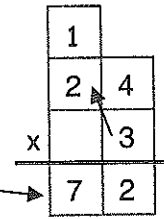
She regroupes 10 ones as 1 ten.



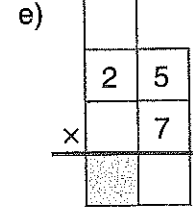
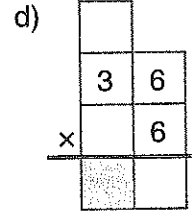
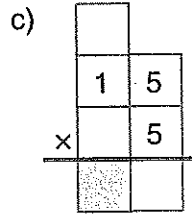
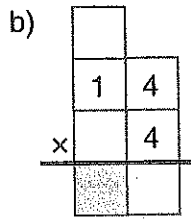
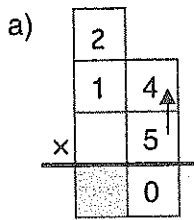
Step 2:

She multiplies 2 tens by 3
($3 \times 2 \text{ tens} = 6 \text{ tens}$).

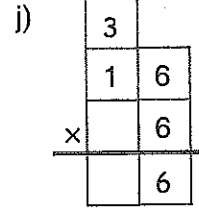
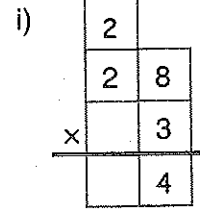
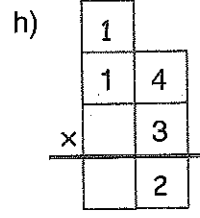
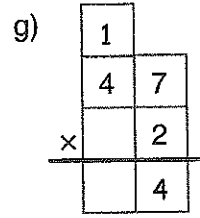
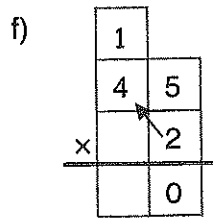
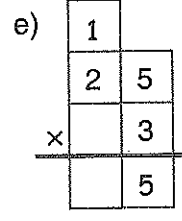
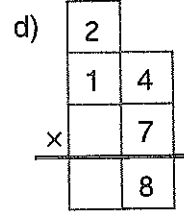
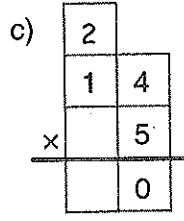
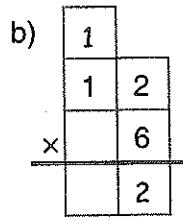
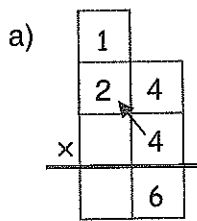
She adds 1 ten to the result
($6 + 1 = 7 \text{ tens}$).



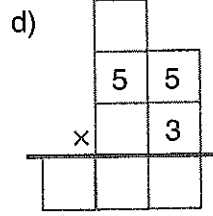
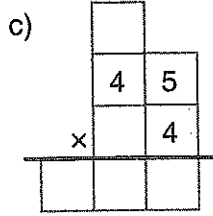
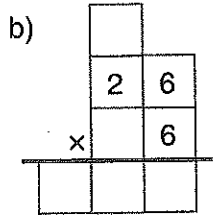
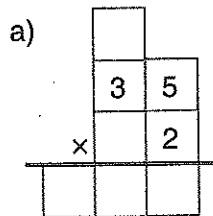
1. Using Jane's method, complete the first step of the multiplication. The first one has been done:



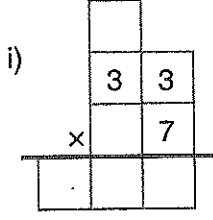
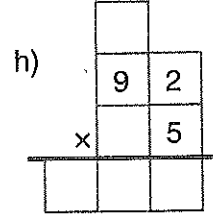
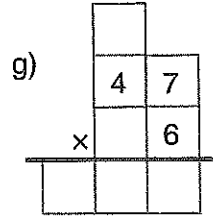
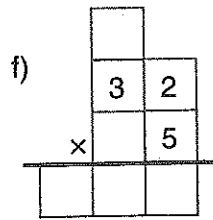
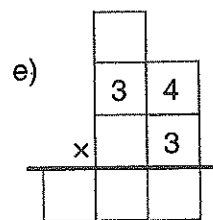
2. Using Jane's method, complete the second step of the multiplication:



3. Using Jane's method, complete the first and second step of the multiplication:



TEACHER:
Be sure to give your students extra practice at this skill.



NS5-26: Multiplying – 3-Digit by 1-Digit

Murray multiplies 2×321 in 3 different ways:

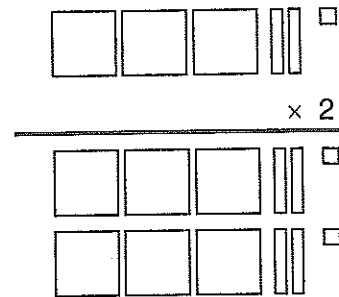
1. With a chart:

	hundreds	tens	ones
	3	2	1
\times			2
	6	4	2

2. In expanded form:

$$\begin{array}{r} 300 + 20 + 1 \\ \times 2 \\ \hline = 600 + 40 + 2 \\ = 642 \end{array}$$

3. With base ten materials:



1. Rewrite the multiplication statement in expanded notation. Then perform the multiplication.

a) 412×3

$$\begin{array}{r} \underline{\quad\quad\quad} + \underline{\quad\quad\quad} + \underline{\quad\quad\quad} \\ \times 3 \\ \hline = \underline{\quad\quad\quad} + \underline{\quad\quad\quad} + \underline{\quad\quad\quad} \\ = \underline{\quad\quad\quad} \end{array}$$

b) 323×2

$$\begin{array}{r} \underline{\quad\quad\quad} + \underline{\quad\quad\quad} + \underline{\quad\quad\quad} \\ \times 2 \\ \hline = \underline{\quad\quad\quad} + \underline{\quad\quad\quad} + \underline{\quad\quad\quad} \\ = \underline{\quad\quad\quad} \end{array}$$

2. Multiply:

a) $\begin{array}{r} \square \ 3 \ 4 \\ \times \quad \quad 2 \\ \hline \end{array}$

b) $\begin{array}{r} 3 \ 1 \ 2 \\ \times \quad \quad 3 \\ \hline \end{array}$

c) $\begin{array}{r} 2 \ 1 \ 2 \\ \times \quad \quad 4 \\ \hline \end{array}$

d) $\begin{array}{r} 3 \ 2 \ 3 \\ \times \quad \quad 3 \\ \hline \end{array}$

e) $\begin{array}{r} 2 \ 1 \ 3 \\ \times \quad \quad 3 \\ \hline \end{array}$

3. Multiply by regrouping ones as tens:

a) $\begin{array}{r} \square \\ 1 \ 1 \ 4 \\ \times \quad \quad 4 \\ \hline \end{array}$

b) $\begin{array}{r} \square \\ 2 \ 2 \ 6 \\ \times \quad \quad 3 \\ \hline \end{array}$

c) $\begin{array}{r} \square \\ 2 \ 2 \ 4 \\ \times \quad \quad 4 \\ \hline \end{array}$

d) $\begin{array}{r} \square \\ 2 \ 1 \ 6 \\ \times \quad \quad 3 \\ \hline \end{array}$

e) $\begin{array}{r} \square \\ 1 \ 1 \ 4 \\ \times \quad \quad 6 \\ \hline \end{array}$

4. Multiply by regrouping tens as hundreds. In the last question, you will also regroup ones as tens:

a) $\begin{array}{r} \square \\ 2 \ 5 \ 2 \\ \times \quad \quad 3 \\ \hline \end{array}$

b) $\begin{array}{r} \square \\ 1 \ 6 \ 1 \\ \times \quad \quad 5 \\ \hline \end{array}$

c) $\begin{array}{r} \square \\ 2 \ 5 \ 3 \\ \times \quad \quad 3 \\ \hline \end{array}$

d) $\begin{array}{r} \square \\ 1 \ 4 \ 2 \\ \times \quad \quad 4 \\ \hline \end{array}$

e) $\begin{array}{r} \square \\ 2 \ 7 \ 4 \\ \times \quad \quad 3 \\ \hline \end{array}$

5. Multiply:

a) 4×142

b) 6×311

c) 7×223

d) 8×324

e) 9×1432

f) 6×25

6. Draw a picture to show the result of the multiplication. You might need to regroup.

a) $\begin{array}{r} \square \ \square \ \square \\ \times 2 \\ \hline \end{array}$

b) $\begin{array}{r} \square \ \square \ \square \\ \times 3 \\ \hline \end{array}$

c) $\begin{array}{r} \square \ \square \ \square \\ \times 4 \\ \hline \end{array}$