Name _____

Vocabulary

1. **Partial products** are the products found by breaking one factor into ones, tens, and hundreds, and then multiplying each of these by the other factor.

```
     223
×     13
-------
     669  ← Partial product from multiplying 223 by the ones in 13
+ 2,230  ← Partial product from multiplying 223 by the tens in 13
-------
   2,899
```

The partial products are _____ and _____.

2. Multiply by the ones. Regroup as needed.

```
    □
  3 4 6
×   1 2
-------
  □□□
```

2 × 6 ones = _____ ones or _____ ten and _____ ones

2 × 4 tens = _____ tens

_____ tens + 1 ten = _____ tens

2 × 3 hundreds = _____ hundreds

3. Multiply by the tens. Regroup as needed.

```
  3 4 6
×   1 2
-------
  □□□
□,□□□
```

10 × 6 ones = _____ ones or _____ tens and _____ ones

10 × 4 tens = _____ tens or _____ hundreds

10 × 3 hundreds = _____ hundreds

or _____ thousands

4. Add the partial products.

```
      3 4 6
×       1 2
---------
      □□□
+ □,□□□
---------
  □,□□□
```

So, 346 × 12 = _____.

On the Back!

5. Use partial products to find 164 × 86. Estimate to check that your answer is reasonable.

Name _____

Enrichment
3-3

School Fair

The fifth-grade students at River Dell Middle School are trying to set records during the annual school fair. Help them tally the totals for the events below.

1. The students put together 12 jigsaw puzzles. Each puzzle had 345 pieces. How many puzzle pieces did they put together in all?

_____

2. The students made a gigantic s'more that all of the fairgoers enjoyed. They used 27 bags of marshmallows. Each bag had 198 marshmallows. How many marshmallows did the students use?

_____

3. The students used 35 boxes of graham crackers to make the s'more. Each box had 208 graham crackers. How many graham crackers did the students use?

_____

4. The students used 19 cases of chocolate to make the s'more. Each case had 154 bars of chocolate. How many chocolate bars did the students use?

_____

5. The students painted an enormous mural. They used 21 cartons of paint. Each carton had 307 tubes of paint. How many tubes of paint did the students use?

_____

6. The students made a tub of lemonade for the fairgoers. They used 46 cases of lemons. Each case held 105 lemons. How many lemons did the students use?

_____

Name _____

Vocabulary

1. The **Zero Property of Multiplication** states that when you multiply any number by zero, the product is zero.

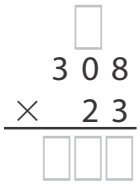
   Any number $\times$ 0 = 0 9 tens $\times$ 0 = _____ tens

2. The **Zero Property of Addition** states that when you add any number to zero, the sum is the original number.

   Any number + 0 = original number 6 tens + 0 = _____ tens

3. Estimate 308 $\times$ 23. _____

4. Multiply the ones. Regroup if necessary.



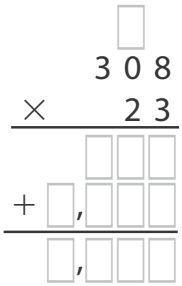
3 $\times$ 8 ones = _____ ones or _____ tens and _____ ones

3 $\times$ 0 tens = _____ tens

_____ tens + 2 tens = _____ tens

3 $\times$ 3 hundreds = _____ hundreds

5. Multiply the tens. Regroup if necessary. Then add the partial products.



20 $\times$ 8 ones = _____ ones or 1 hundred and 60 ones

20 $\times$ 0 tens = _____ tens or _____ hundreds

_____ hundreds + 1 hundred = _____ hundred

20 $\times$ 3 hundreds = _____ hundreds or _____ thousands

6. Look back at your estimate. Is your answer close to your estimate?

_____

On the Back!

7. Use a place-value chart to multiply 12 $\times$ 206. Record each partial product in the correct place in the chart.

Name _____

Enrichment
3-4

Crossing Numbers

Find the products to complete the cross number puzzle.

1						2		3		
		4	5			6				7
8						9				
10										

Across

1. 406 × 54

2. 302 × 48

4. 902 × 36

8. 970 × 89

9. 870 × 92

10. 208 × 55

Down

1. 704 × 42

3. 620 × 74

5. 309 × 66

6. 803 × 31

7. 780 × 36

Name_____

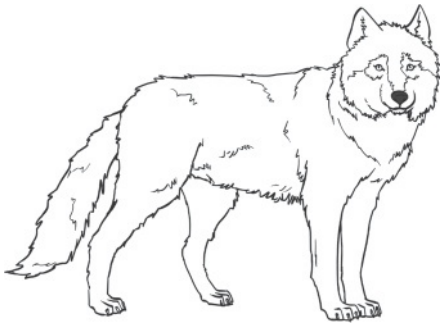
Problem-Solving Reading Activity
3-4

Wolf Math

Sheba is in a pack of 21 wolves. Use the information about Sheba to solve each problem.

Sheba's pack's territory is about 606 square miles.

Sheba usually eats about 18 pounds of food in one sitting.



Sheba travels about 15 miles per day hunting for food.

Sheba weighs 108 lbs.

1. If 106 wolves each eat the same amount of meat as Sheba. About how many pounds of meat do they eat?

_____

2. If Sheba's weight is the average for her pack, about how much does the whole pack weigh?

_____

3. About how many miles does Sheba travel in 120 days looking for food?

_____

4. If 13 other packs have territories similar to the area covered by Sheba's pack, about how many square miles of land are covered by the 14 packs of wolves?

_____

Name _____

Vocabulary

1. **Expanded form** is a way to write numbers to show the place value of each digit.

   $143 = (1 \times 100) + (4 \times 10) + (3 \times 1)$
   $143 = 100 + 40 + 3$

   The expanded form of 256 is _____ + _____ + _____.

Complete **2–4** to find $5 \times 3{,}512$.

2. Write 3,512 in expanded form.

   3,512 = 3,000 + _____ + _____ + _____

3. Use mental math to find the partial products.

   $3{,}000 \times 5 =$ _____

   $500 \times 5 =$ _____

   $10 \times 5 =$ _____

   $2 \times 5 =$ _____

4. Add the partial products.

   _____ + _____ + _____ + _____ = _____

   So, $5 \times$ _____ = _____

5. A sports equipment store rents road bikes for $23 an hour. Over the summer, these bikes were rented for a total of 1,080 hours. How much money did the store make renting bikes?

   _____

   _____

```
    1 0 8 0
  ×     2 3
  ---------
    □□□□
  + □□□□□
  ---------
  □□,□□□
```

On the Back!

6. Find 265×7 using expanded form.

Name _____

Enrichment
3-5

Which Operation?

The Williams family is doing a lot of driving on their vacation. Use the chart to answer the questions.

Family Vacation

Day	Distance
1	480 mi
2	260 mi
3	40 mi
4	150 mi
5	100 mi
6	320 mi

1. How many miles is the Williams family driving altogether?

_____

2. On one day of their trip, the Williams family will be staying in one city to see the sights. On which day are they most likely staying in one city? Explain.

_____

_____

_____

3. If they drive nonstop at 60 mi each hour on day 1, for how many hours will they drive?

_____

4. How far will the Williams family drive on days 4, 5, and 6 combined?

_____

5. Which is greater, the distance they will drive on days 1, 2, and 3 combined or the distance they will drive on days 4, 5, and 6 combined?

_____

_____

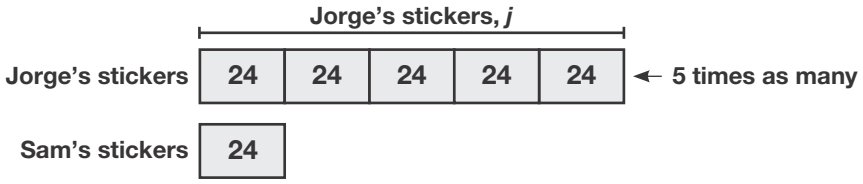
6. If they drive a constant 50 mi each hour on day 6, for how many hours will they have to drive?

_____

Name _____

Vocabulary

1. A **bar diagram** can be used to solve multiplication comparison problems.
A **variable** is a letter used to represent a quantity in an expression or equation.



How many stickers does Sam have? _____

What does the variable *j* represent? _____

_____

How many stickers does Jorge have in all?

_____ × _____ = _____. Jorge has _____ stickers.

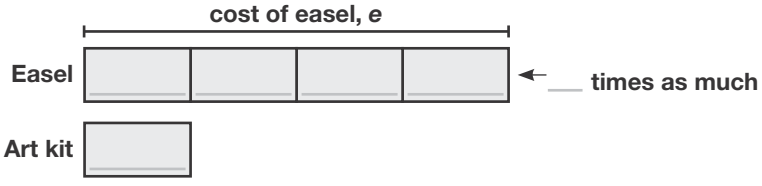
2. Omar bought an art kit for $14 and an easel that cost 4 times as much as the art kit. How much was the easel?

What do you know?

_____

What do you need to find? _____

3. Draw a bar diagram to represent the problem.



4. Write an equation for the cost of the easel.

Let *e* = the cost of the _____

e = $14 × _____ = _____

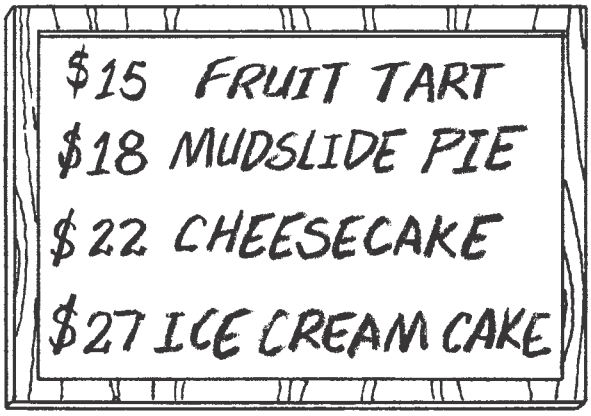
On the Back!

5. A concert hall seats 1,765 people. An orchestra played 5 nights in a row at the hall. What is the total attendance for the orchestra if the concert hall was sold out each night? Draw a bar diagram and write an equation to solve.

Name _____

Enrichment
3-6

Jackson's Bakery



1. Jackson's Bakery sold 291 cheesecakes in one day. How much money did Jackson's Bakery make in one day from cheesecakes?

_____

2. Jackson's Bakery sold 102 ice cream cakes and 68 fruit tarts in one weekend. How much money did Jackson's Bakery make in one weekend from ice cream cakes and fruit tarts?

_____

3. The new pastry chef at Jackson's Bakery specializes in sheet cakes for parties. She sold 17 small, 11 medium, and 20 large sheet cakes in one week. How much money did Jackson's Bakery make in one week from sheet cakes?

_____

4. How many people would all of the sheet cakes sold in problem 3 feed?

_____

Name _____

Enrichment
3-7

Be a Critic

A cable car ticket costs $18. One day, a car carried 429 people with single-ride tickets. How much were ticket sales for that day?

Arianna and Marcus solved the problem as shown below. Use their work to answer the questions.

Arianna

```
  429
×  18
 3432
 429
 7461
```

$7,461

Marcus

	400	20	9
10	4,000	200	90
8	3,200	160	72

4,000 + 3,200 + 200 + 160 + 90 + 72 = $7722

1. Is Arianna's answer reasonable? Explain your reasoning.

_____

_____

_____

2. Did Arianna solve the problem correctly? Explain your reasoning.

_____

_____

_____

3. Did Marcus solve the problem correctly? Explain your reasoning.

_____

_____

_____

