

Name \_\_\_\_\_

# Multiply to Solve

1. The Parent Association (PA) is ordering caramel apples. A box holds 20 caramel apples. If the PA ordered 50 boxes, how many caramel apples did they order? Show your work.

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2. Paul needs to explain to his class how to use mental math to find the product of  $40 \times 50$ . What should Paul tell his class?

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3. Maggie meditates 10 minutes each day before school and 30 minutes each day after school. She attends school Monday through Friday. How many minutes does Maggie meditate in 4 weeks? Show your work.

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4. Mrs. Teagan is collecting dimes from her family members. Each of her 5 family members gave her 8 dimes at the end of the week. How much money did Mrs. Teagan have at the end of the week? Show your work.

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5. Nick volunteers at the senior center each Saturday for 60 minutes and each Sunday for 40 minutes. He takes two weeks off for vacation each year. How many minutes does Nick volunteer in one year? Show your work.

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Name \_\_\_\_\_

Enrichment

4-1

## Multiply to Solve

**Solutions  
may vary.**

1. The Parent Association (PA) is ordering caramel apples. A box holds 20 caramel apples. If the PA ordered 50 boxes, how many caramel apples did they order? Show your work.

$$\underline{20 \times 50 = 1,000 \text{ caramel apples}}$$

2. Paul needs to explain to his class how to use mental math to find the product of  $40 \times 50$ . What should Paul tell his class?

**First, multiply the non-zero digits**

**( $4 \times 5 = 20$ ). Then count the zeros in**

**$40 \times 50$  (two). Place two zeros after the product of the non-zero digits: 2,000.**

3. Maggie meditates 10 minutes each day before school and 30 minutes each day after school. She attends school Monday through Friday. How many minutes does Maggie meditate in 4 weeks? Show your work.

$$\underline{4 \times 5 = 20 \text{ days; } (10 \times 20) + (30 \times 20) = 200 + 600 = 800 \text{ minutes}}$$

4. Mrs. Teagan is collecting dimes from her family members. Each of her 5 family members gave her 8 dimes at the end of the week. How much money did Mrs. Teagan have at the end of the week? Show your work.

$$\underline{5 \times 8 = 40; 40 \times 10\text{¢} = 400\text{¢} \text{ or } \$4.00}$$

5. Nick volunteers at the senior center each Saturday for 60 minutes and each Sunday for 40 minutes. He takes two weeks off for vacation each year. How many minutes does Nick volunteer in one year? Show your work.

$$\underline{(50 \times 60) + (50 \times 40) = 3,000 + 2,000 = 5,000 \text{ minutes}}$$

Name \_\_\_\_\_

Enrichment

4-2

## A Finished Product!

Find each partial product. Then, use numbers from the equations to complete the sentences.

1.  $30 \times 20 =$  \_\_\_\_\_ Marie had \_\_\_\_\_ songs on her music player.

$30 \times 4 =$  \_\_\_\_\_ She added \_\_\_\_\_ more songs.

$30 \times 24 =$  \_\_\_\_\_ Now Marie has a total of \_\_\_\_\_ songs.

2.  $60 \times 80 =$  \_\_\_\_\_ A sporting goods manufacturer shipped out \_\_\_\_\_

$60 \times 3 =$  \_\_\_\_\_ bowling pins and \_\_\_\_\_ bowling balls to an

$60 \times 83 =$  \_\_\_\_\_ alley. There were \_\_\_\_\_ items in all.

3.  $90 \times 70 =$  \_\_\_\_\_ The population of Desertvale was recorded at

$90 \times 4 =$  \_\_\_\_\_ \_\_\_\_\_ in January. There were \_\_\_\_\_ more

$90 \times 74 =$  \_\_\_\_\_ people added in a year. The following January, the population of Desertvale was \_\_\_\_\_.

4.  $80 \times 80 =$  \_\_\_\_\_ Jed estimated that there were \_\_\_\_\_

$80 \times 5 =$  \_\_\_\_\_ jellybeans in a jar. When the jellybeans were finally

$80 \times 85 =$  \_\_\_\_\_ counted, Jed found there were actually \_\_\_\_\_

more. In fact, there were \_\_\_\_\_ jellybeans in all.

5.  $40 \times 50 =$  \_\_\_\_\_ Now, create your own sentences using the equations in Exercise 5.

$40 \times 2 =$  \_\_\_\_\_

$40 \times 52 =$  \_\_\_\_\_

**Vocabulary**

1. An **array** is a model used to display objects in rows and columns. This place-value block array models 10 groups of 14.

There are **10** groups of 10.

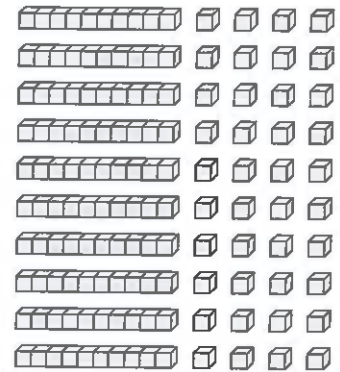
There are **10** groups of 4.

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

Find the product of  $10 \times 14$ .

$$\begin{array}{r} 100 \\ + 40 \\ \hline 140 \end{array}$$

← 10 groups of 10 or  $10 \times 10 = 100$   
 ← 10 groups of 4 or  $10 \times 4 = 40$   
 ← Add the partial products.



Use the array at the right to find the product of  $20 \times 15$ .

3. There are **20** groups of 10.

There are **20** groups of **5**.

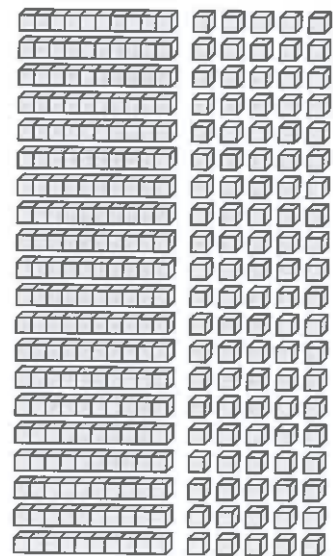
Find the partial products.

$$20 \times 10 = 200 \quad 20 \times 5 = 100$$

Add the partial products.

$$200 + 100 = 300$$

So,  $20 \times 15 = 300$ .



4. Draw an array to find the product of  $30 \times 26$ . **Check students' arrays.**

$$30 \text{ groups of } 20 = 600 \quad 30 \text{ groups of } 6 = 180$$

$$600 + 180 = 780$$

So,  $30 \times 26 = 780$ .

**On the Back!**

5. Draw an array to find the product of  $40 \times 21$ .

**840; Check students' arrays.**

Name \_\_\_\_\_

# Decision Making

The student council at Greenway Elementary School needs to choose a fund-raising event. Here are three possible choices.

**A Rent-a Student:** Costs involved in the Rent-a-Student program total \$100. The council estimates that 27 students are available for 8 hours each. The cost to rent a student is \$1 an hour.

**B Ticket Raffle:** The students raffle two tickets to a professional basketball game. Each ticket to the game costs \$74. Each raffle ticket will sell for \$2. The students should be able to sell 378 tickets.

**C Juice Sale:** The students sell juice at the school carnival. They think they can sell 6 cases of juice at \$18 a case. The booth is open for 6 hours. The juice costs \$12 for one case.

1. Estimate the cost of each choice.

Choice A \_\_\_\_\_ Choice B \_\_\_\_\_ Choice C \_\_\_\_\_

2. About how much money will each choice earn?

Choice A \_\_\_\_\_ Choice B \_\_\_\_\_ Choice C \_\_\_\_\_

3. About how much profit would the school earn from each choice?

Choice A \_\_\_\_\_ Choice B \_\_\_\_\_ Choice C \_\_\_\_\_

4. Besides profit, what other factors should the student-council members consider before making their decision?

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5. Which event would be the best choice? Explain.

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Name \_\_\_\_\_

## Decision Making

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**C Juice Sale:** The students sell juice at the school carnival. They think they can sell 6 cases of juice at \$18 a case. The booth is open for 6 hours. The juice costs \$12 for one case.

1. Estimate the cost of each choice.

Choice A \$100      Choice B \$140      Choice C \$60

2. About how much money will each choice earn?

Choice A \$240      Choice B \$800      Choice C \$120

3. About how much profit would the school earn from each choice?

Choice A \$140      Choice B \$660      Choice C \$60

4. Besides profit, what other factors should the student-council members consider before making their decision?

Sample answer: Number of volunteers each event requires; the amount of time and work needed to set up and complete each event

5. Which event would be the best choice? Explain.

Sample answer: B is the easiest to arrange and earns the greatest profit.

Name \_\_\_\_\_

# Flower Garden

Flowers are fertilized when pollen is carried from one flower to another flower by wind, bees, and other animals.

The picture shows how many flowers are sold each week. Use the picture to solve each problem.

**Remember:** There are 52 weeks in 1 year.

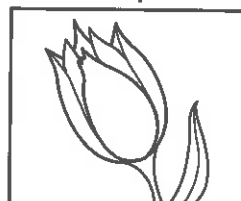
## Rosi's Garden Weekly Flower Sales

Pansies



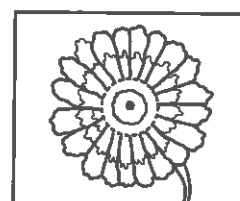
29

Tulips



68

Zinnias



43

1. About how many flowers does Rosi's Garden sell each year? Estimate to solve the problem.

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2. About how many more tulips and pansies are sold than zinnias in 1 year? Estimate to solve the problem.

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3. Rosi says the number of pansies and zinnias sold in 1 year is about 2,500. Is her estimate reasonable? Explain.

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Name \_\_\_\_\_

## Approximate Eggs

Molly lives on a farm. Her family sells eggs in cartons holding 24 or 48 eggs. Explain how to use compatible numbers to estimate each of the following.

1. About how many eggs are in 38 of the small cartons?

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2. In March, Molly's family sold 82 of the small cartons and 29 of the large cartons. About how many eggs did they sell in all?

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3. In April, Molly's family sold 21 of the large cartons and three times as many small cartons. About how many eggs did they sell in all?

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4. In May, Molly's family sold 19 of the large cartons and 32 more small cartons than large cartons. About how many more eggs did they sell in small cartons than in large ones?

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Name \_\_\_\_\_

Enrichment

**4-4**

## Approximate Eggs

Molly lives on a farm. Her family sells eggs in cartons holding 24 or 48 eggs. Explain how to use compatible numbers to estimate each of the following.

1. About how many eggs are in 38 of the small cartons?

**Sample answer: About 1,000;  $38 \times 24$  is about  $40 \times 25 = 1,000$ .**

2. In March, Molly's family sold 82 of the small cartons and 29 of the large cartons. About how many eggs did they sell in all?

**Sample answer: About 3,500;  $82 \times 24$  is about  $80 \times 25 = 2,000$ ,  $29 \times 48$  is about  $30 \times 50 = 1,500$ , and  $2,000 + 1,500 = 3,500$ .**

3. In April, Molly's family sold 21 of the large cartons and three times as many small cartons. About how many eggs did they sell in all?

**Sample answer: About 2,500;  $21 \times 48$  is about  $20 \times 50 = 1,000$ , and  $3 \times 21 \times 24$  is about  $3 \times 20 = 60$  and  $60 \times 25 = 1,500$ ;  $1,000 + 1,500 = 2,500$**

4. In May, Molly's family sold 19 of the large cartons and 32 more small cartons than large cartons. About how many more eggs did they sell in small cartons than in large ones?

**Sample answer: About 250; Large cartons:  $19 \times 48$  is about  $20 \times 50 = 1,000$ ; Add  $19 + 32 = 51$ , and then multiply:  $51 \times 24$  is about  $50 \times 25 = 1,250$ ;  $1,250 - 1,000 = 250$**

Name \_\_\_\_\_

# Food for Thought

You work at a pet shop. One of your jobs is to feed all the animals. Answer the questions below using the chart at the right.

First thing in the morning you feed the fish. The 12 fish tanks have a total of 26 large fish. You can choose between two kinds of pellets.

**Daily Feeding Chart**

<b>Fish</b>	11 super pellets each or 32 mini pellets each
<b>Puppies</b>	16 oz dry food each or 12 oz wet food each

1. Which kind of pellets do you choose? Estimate the number of pellets you need. Explain your method.

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2. What is the exact number of pellets?

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You feed the puppies next. There are 10 cages of large-breed puppies. Each cage can hold 3 puppies, but 2 of the cages only have 2 puppies each. You need to decide which food to give the puppies.

3. What kind of puppy food do you choose? Estimate the amount of puppy food you need. Explain your method.

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4. What is the exact amount of puppy food?

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Name \_\_\_\_\_

Enrichment  
**4-5**

## Food for Thought

You work at a pet shop. One of your jobs is to feed all the animals. Answer the questions below using the chart at the right.

First thing in the morning you feed the fish. The 12 fish tanks have a total of 26 large fish. You can choose between two kinds of pellets.

Daily Feeding Chart

<b>Fish</b>	11 super pellets each or 32 mini pellets each
<b>Puppies</b>	16 oz dry food each or 12 oz wet food each

1. Which kind of pellets do you choose? Estimate the number of pellets you need. Explain your method.

**Food choice and estimates vary. For super pellets estimate  $26 \times 11$  by finding  $26 \times 10$  which is 260. For mini pellets estimate  $26 \times 32$  by finding  $30 \times 30$  which is 900.**

2. What is the exact number of pellets?

**286 super pellets; 832 mini pellets**

You feed the puppies next. There are 10 cages of large-breed puppies. Each cage can hold 3 puppies, but 2 of the cages only have 2 puppies each. You need to decide which food to give the puppies.

3. What kind of puppy food do you choose? Estimate the amount of puppy food you need. Explain your method.

**Food choice and estimates vary. For dry food, estimate  $28 \times 16$  by finding  $30 \times 20$ , which is 600. For wet food, estimate  $28 \times 12$  by finding  $30 \times 10$ , which is 300.**

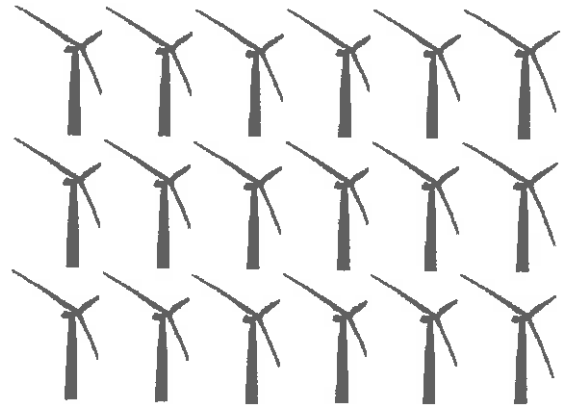
4. What is the exact amount of puppy food?

**448 ounces of dry food; 336 ounces of wet food**

# Planning a Wind Farm

**Did You Know?** A large wind turbine can produce more than one megawatt of electricity. 1 megawatt is the same as 1,000,000 watts. This is enough electricity to light ten thousand 100-watt light bulbs.

A wind farm has many wind turbines often arranged in arrays. Some wind farms produce enough electricity for thousands of households.



A city of about 200,000 people is planning to build a wind farm. They want the wind farm to generate enough electricity for the entire city. The city estimates that they need at least 6,750 megawatts per hour of electricity.

Use the information in the table to decide which plan the city should choose.

Plan	Wind Farm Array	Megawatts per Turbine per Hour	Total Number of Turbines	Total Megawatts per Hour
A	43 rows of 20	8		
B	19 rows of 50	7		
C	28 rows of 40	6		
D	33 rows of 30	7		

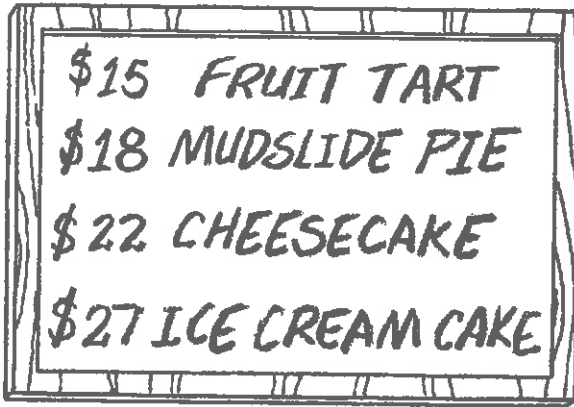
- 1 Complete the table.
- 2 **Extension** Which plan should the city choose? Explain.

Name \_\_\_\_\_

Enrichment

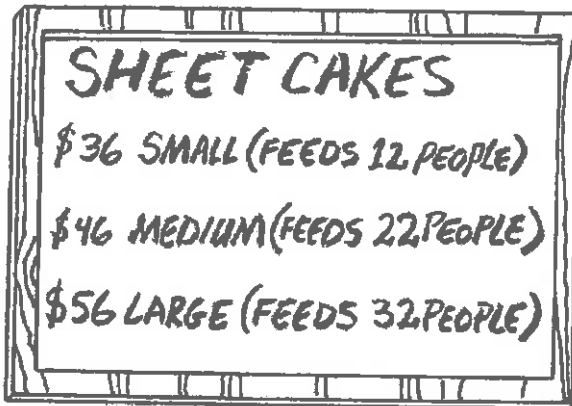
4-6

# Jackson's Bakery



1. Jackson's Bakery sold 29 cheesecakes in one day. How much money did Jackson's Bakery make in one day from cheesecakes?
- 

2. Jackson's Bakery sold 15 ice cream cakes and 31 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?
- 

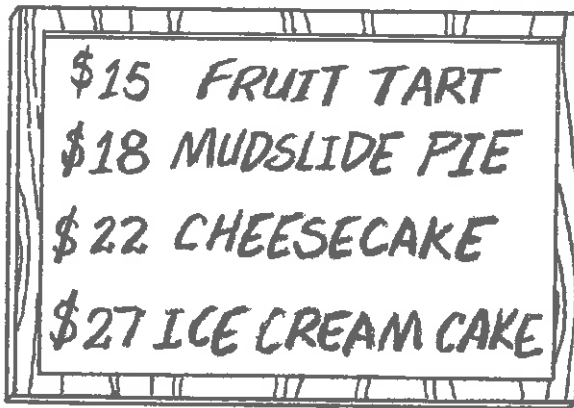
4. How many people would all of the sheet cakes sold in problem 3 feed?
-

Name \_\_\_\_\_

Enrichment

4-6

## Jackson's Bakery



\$15	FRUIT TART
\$18	MUDSLIDE PIE
\$22	CHEESECAKE
\$27	ICE CREAM CAKE

1. Jackson's Bakery sold 29 cheesecakes in one day. How much money did Jackson's Bakery make in one day from cheesecakes?

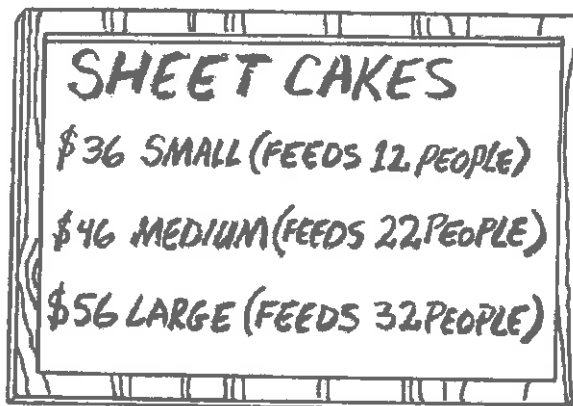
**\$638**

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2. Jackson's Bakery sold 15 ice cream cakes and 31 fruit tarts in one weekend. How much money did Jackson's Bakery make in one weekend from ice cream cakes and fruit tarts?

**\$870**

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SHEET CAKES	
\$36	SMALL (FEEDS 12 PEOPLE)
\$46	MEDIUM (FEEDS 22 PEOPLE)
\$56	LARGE (FEEDS 32 PEOPLE)

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?

**\$2,238**

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

**1,086 people**

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Name \_\_\_\_\_

Enrichment  
**4-7**

## Ticket Reasoning

A New York theater company is putting on a play in Kaytown. Some local fifth-grade students are selling tickets to raise money for a class-field trip. The class gets \$18 for each ticket the students sell.

Use the following clues and answer the questions to find how much money the students make. Show all your partial products when you multiply two-digit numbers.

- Kara sold twelve times as many tickets as Max.
- Max sold 28 fewer tickets than Manny.
- Manny sold 15 times as many tickets as Kalinda.
- Kalinda sold 3 tickets.

1. How many tickets did each student sell? Explain your reasoning.

2. How much money did Manny make?

Name \_\_\_\_\_

## Ticket Reasoning

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- Kara sold twelve times as many tickets as Max.
- Max sold 28 fewer tickets than Manny.
- Manny sold 15 times as many tickets as Kalinda.
- Kalinda sold 3 tickets.

1. How many tickets did each student sell? Explain your reasoning.

**Kalinda sold 3; Manny sold 45 because  $15 \times 3 = 45$ ; Max sold 17 because  $45 - 28 = 17$ ; Kara sold 204 because  $12 \times 17 = 204$ .**

$$\begin{array}{r} 17 \\ \times 12 \\ \hline 14 \\ 20 \\ + 100 \\ \hline 204 \end{array}$$

2. How much money did Manny make?

**\$810**

$$\begin{array}{r} 45 \\ \times 18 \\ \hline 40 \\ 320 \\ 50 \\ + 400 \\ \hline 810 \end{array}$$



# Make a Match

Write the letter of the expression or array in Column B below the expression in Column A that has the same value.

**Column A**

1.  $20 \times 24$

\_\_\_\_\_

2.  $20 \times 38$

\_\_\_\_\_

3.  $(20 \times 10) + (20 \times 7)$

\_\_\_\_\_

4.  $(10 \times 30) + (10 \times 2)$

\_\_\_\_\_

5.  $50 \times 86$

\_\_\_\_\_

6.  $90 \times 48$

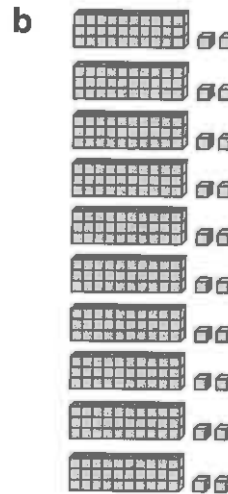
\_\_\_\_\_

7.  $30 \times 21$

\_\_\_\_\_

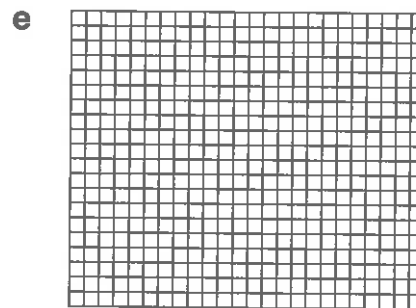
**Column B**

a  $3,600 + 720$



c  $(20 \times 30) + (20 \times 8)$

d  $600 + 30$



f  $20 \times 17$

g  $(50 \times 80) + (50 \times 6)$

Name \_\_\_\_\_

# Make a Match

Write the letter of the expression or array in Column B below the expression in Column A that has the same value.

**Column A**

1.  $20 \times 24$

e

2.  $20 \times 38$

c

3.  $(20 \times 10) + (20 \times 7)$

f

4.  $(10 \times 30) + (10 \times 2)$

b

5.  $50 \times 86$

g

6.  $90 \times 48$

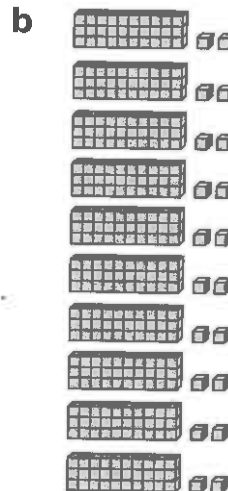
a

7.  $30 \times 21$

d

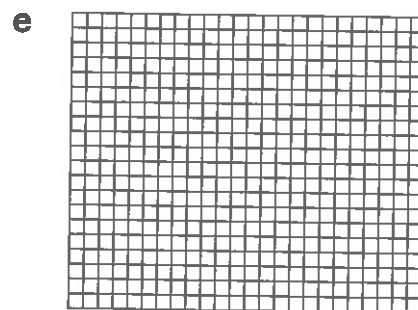
**Column B**

a  $3,600 + 720$



c  $(20 \times 30) + (20 \times 8)$

d  $600 + 30$



f  $20 \times 17$

g  $(50 \times 80) + (50 \times 6)$

Name \_\_\_\_\_

# Cross Number Puzzle

Find the products to complete the cross number puzzle.

Across

1.  $36 \times 17$
3.  $17 \times 19$
4.  $42 \times 13$
5.  $65 \times 68$
7.  $38 \times 82$
9.  $15 \times 14$
10.  $21 \times 13$

1		2		3				4		
		5	6				7		8	
			9				10			

Down

1.  $72 \times 91$
2.  $16 \times 14$
3.  $14 \times 28$
4.  $29 \times 19$
6.  $36 \times 12$
7.  $32 \times 11$
8.  $11 \times 13$

Name \_\_\_\_\_

Enrichment  
**4-9**

# Cross Number Puzzle

Find the products to complete the cross number puzzle.

Across

1.  $36 \times 17$
3.  $17 \times 19$
4.  $42 \times 13$
5.  $65 \times 68$
7.  $38 \times 82$
9.  $15 \times 14$
10.  $21 \times 13$

<sup>1</sup> 6	1	<sup>2</sup> 2		<sup>3</sup> 3	2	3		<sup>4</sup> 5	4	6
5		2		9				5		
5		<sup>5</sup> 4	<sup>6</sup> 4	2	0		<sup>7</sup> 3	<sup>8</sup> 1	<sup>8</sup> 1	6
2			3				5		4	
			<sup>9</sup> 2	1	0		<sup>10</sup> 2	7	3	

Down

1.  $72 \times 91$
2.  $16 \times 14$
3.  $14 \times 28$
4.  $29 \times 19$
6.  $36 \times 12$
7.  $32 \times 11$
8.  $11 \times 13$

Name \_\_\_\_\_

# Greenhouse Plants

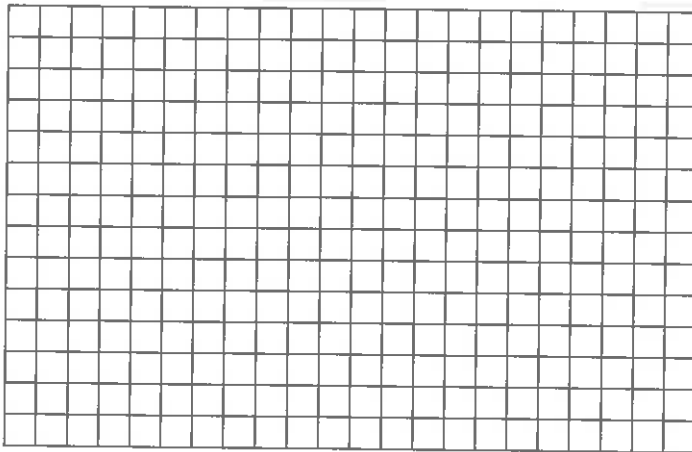
Pat takes care of the plants in his greenhouse. Solve each multiplication problem.

1. Pat has 84 tall plants with 42 leaves on each. How many leaves are there in all? Find all the partial products. Then add to find the final product.

\_\_\_\_\_ leaves

$$\begin{array}{r} 84 \\ \times 42 \\ \hline \phantom{00} \\ \phantom{00} \\ \phantom{00} \\ \phantom{00} \\ + \phantom{00} \\ \hline \phantom{00} \end{array}$$

2. Pat plants 22 seeds in each of 14 rows. Use the diagram below to show how to find  $14 \times 22$ . Write the partial products. Then solve and tell how you know.



\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Name \_\_\_\_\_

# Slippery Digits

For each exercise, follow the directions to form a multiplication problem and find its product. There may be more than one solution.

1. Use each of the digits 5, 6, 7, and 8 once. Fill in the boxes to make a product that is less than 4,000.

---

$$\begin{array}{r} \square \square \\ \times \square \square \\ \hline \end{array}$$

2. Use each of the digits 3, 4, 5, and 6 once. Fill in the boxes to make a product between 2,500 and 3,000.

---

$$\begin{array}{r} \square \square \\ \times \square \square \\ \hline \end{array}$$

3. Use each of the digits 2, 4, 6, and 8 once. Fill in the boxes to make a product that is greater than 2,150.

---

$$\begin{array}{r} \square \square \\ \times \square \square \\ \hline \end{array}$$

4. Use each of the digits 1, 3, 5, and 7 once. Fill in the boxes to make a product with 3 digits that are the same.

---

$$\begin{array}{r} \square \square \\ \times \square \square \\ \hline \end{array}$$

5. Use each of the digits 2, 3, 5, and 8 once. Fill in the boxes to make a product that is less than 1,000 and has 0 ones.

---

$$\begin{array}{r} \square \square \\ \times \square \square \\ \hline \end{array}$$

6. Use any 4 different digits, once each. Fill in the boxes to make a product that has all even digits. HINT: Digits in the product may repeat.

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$$\begin{array}{r} \square \square \\ \times \square \square \\ \hline \end{array}$$

# Slippery Digits

For each exercise, follow the directions to form a multiplication problem and find its product. There may be more than one solution. **Sample answers are given.**

1. Use each of the digits 5, 6, 7, and 8 once. Fill in the boxes to make a product that is less than 4,000.

$$\begin{array}{r} 58 \times 67 = 3,886; \\ 57 \times 68 = 3,876 \end{array}$$

$$\begin{array}{r} \square \square \\ \times \square \square \\ \hline \end{array}$$

2. Use each of the digits 3, 4, 5, and 6 once. Fill in the boxes to make a product between 2,500 and 3,000.

$$\begin{array}{r} 65 \times 43 = 2,795; \\ 63 \times 45 = 2,835 \end{array}$$

$$\begin{array}{r} \square \square \\ \times \square \square \\ \hline \end{array}$$

3. Use each of the digits 2, 4, 6, and 8 once. Fill in the boxes to make a product that is greater than 2,150.

$$\begin{array}{r} \text{Sample answer:} \\ 26 \times 84 = 2,184 \end{array}$$

$$\begin{array}{r} \square \square \\ \times \square \square \\ \hline \end{array}$$

4. Use each of the digits 1, 3, 5, and 7 once. Fill in the boxes to make a product with 3 digits that are the same.

$$37 \times 15 = 555$$

$$\begin{array}{r} \square \square \\ \times \square \square \\ \hline \end{array}$$

5. Use each of the digits 2, 3, 5, and 8 once. Fill in the boxes to make a product that is less than 1,000 and has 0 ones.

$$\begin{array}{r} 25 \times 38 = 950; \\ 35 \times 28 = 980 \end{array}$$

$$\begin{array}{r} \square \square \\ \times \square \square \\ \hline \end{array}$$

6. Use any 4 different digits, once each. Fill in the boxes to make a product that has all even digits. HINT: Digits in the product may repeat.

$$\begin{array}{r} \text{Sample answer:} \\ 42 \times 53 = 2,226 \end{array}$$

$$\begin{array}{r} \square \square \\ \times \square \square \\ \hline \end{array}$$

# Fossil Fuels

**Did You Know?** Coal, petroleum (oil), and natural gas are fossil fuels. These fuel sources are formed when buried dead plants and animals decompose. This takes thousands and thousands of years. Because this process takes so long, these fuels are called *nonrenewable* fuel sources. According to the Department of Energy, 85% of the total energy production in the U.S. comes from fossil fuels.

Coal, petroleum, and natural gas can be used to create electricity. The amount of electricity used can be measured in kilowatt-hours (kWh).

- 1 The table below shows the daily usage of electricity in households in several states. Complete the table by finding the amount of electricity used in one, four, and six weeks.

State	Average Daily Usage (kWh)	Average Weekly Usage (kWh)	Average 4-Week Usage (kWh)	Average 6-Week Usage (kWh)
Massachusetts	21			
Illinois	26			
Florida	37			
Texas	41			
California	19			

- 2 Find the difference between the least and greatest average 6-week usage.
- 3 Factors such as climate, lifestyle, and family size affect usage rates. Consumers in year-round temperate climates use less electricity for heating and cooling. Which state has the least average usage? What factors might influence that state's electric usage?
- 4 **Extension** One gallon of oil produces about 15 kilowatt-hours of electricity. About how many gallons of oil would it take for a household's daily consumption of electricity in Illinois?



Name \_\_\_\_\_

## Which Property?

For questions 1–4, write the multiplication property that makes the statement true.

1.  $7 \times 49 = 49 \times 7$

\_\_\_\_\_

2.  $891 \times 0 = 0$

\_\_\_\_\_

3.  $1 \times 246 = 246$

\_\_\_\_\_

4.  $27 \times 39 = (20 \times 30) + (7 \times 30) + (20 \times 9) + (7 \times 9)$

\_\_\_\_\_

5. How can knowing a multiplication property help you find the product of a problem with three factors, such as  $50 \times 86 \times 1$ ?

\_\_\_\_\_

\_\_\_\_\_

6. If you multiply any number by 1, can the product ever be greater than that number? Explain.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Use multiplication properties to determine the missing number for each box.

7.  $2,378 \times 5 \times \square = 0$

8.  $3 \times (9 \times 17) = (3 \times 9) \times \square$

9.  $657 \times \square = 657$

10.  $264 \times \square = 39 \times 264$

Name \_\_\_\_\_

Enrichment

**4-11**

## Which Property?

For questions 1–4, write the multiplication property that makes the statement true.

1.  $7 \times 49 = 49 \times 7$

**Commutative Property of Multiplication**

2.  $891 \times 0 = 0$

**Zero Property of Multiplication**

3.  $1 \times 246 = 246$

**Identity Property of Multiplication**

4.  $27 \times 39 = (20 \times 30) + (7 \times 30) + (20 \times 9) + (7 \times 9)$

**Distributive Property of Multiplication**

5. How can knowing a multiplication property help you find the product of a problem with three factors, such as  $50 \times 86 \times 1$ ?

**You can use the Identity Property of Multiplication to find  $86 \times 1$  and then multiply  $86 \times 50$ .**

6. If you multiply any number by 1, can the product ever be greater than that number? Explain.

**No, the product is always equal to the original number because of the Identity Property of Multiplication.**

Use multiplication properties to determine the missing number for each box.

7.  $2,378 \times 5 \times \boxed{0} = 0$

8.  $3 \times (9 \times 17) = (3 \times 9) \times \boxed{17}$

9.  $657 \times \boxed{1} = 657$

10.  $264 \times \boxed{39} = 39 \times 264$