

Name _____

Reteach to Build
Understanding

4-1

Vocabulary

1. A **product** is an answer to a multiplication problem.

Find each product.

$3 \times 8 = \underline{\quad}$

$7 \times 6 = \underline{\quad}$

$2 \times 5 = \underline{\quad}$

2. **Factors** are the numbers that are multiplied together to give a product.

Find each missing factor.

$9 \times \underline{\quad} = 54$

$\underline{\quad} \times 4 = 12$

$\underline{\quad} \times 6 = 30$

Each of the multiplication sentences above is an example of a basic fact.
You can use basic facts and patterns to multiply multiples of 10.

Look for a pattern in the number of zeros in the factors and the products.

$3 \times 6 = 18 \leftarrow \text{Basic fact}$

$$\begin{array}{r} 30 \\ \uparrow \\ 3 \end{array} \times \begin{array}{r} 60 \\ \uparrow \\ 6 \end{array} = \begin{array}{r} 1,800 \\ \uparrow \\ 18 \end{array}$$

1 zero + 1 zero = 2 zeros inserted after the product of the basic fact.

$4 \times 5 = 20 \leftarrow \text{Basic fact}$

$$\begin{array}{r} 40 \\ \uparrow \\ 4 \end{array} \times \begin{array}{r} 50 \\ \uparrow \\ 5 \end{array} = \begin{array}{r} 2,000 \\ \uparrow \\ 20 \end{array}$$

1 zero + 1 zero = 2 zeros inserted after the product of the basic fact.

Use a basic fact and a pattern to multiply.

5. $6 \times 7 = 42$

$60 \times 7 =$

$60 \times 70 =$

6. $8 \times 9 =$

$80 \times 9 =$

$80 \times 90 =$

On the Back!

7. Use basic facts and patterns to find 30×30 .

Vocabulary

1. A **product** is an answer to a multiplication problem.

Find each product.

$3 \times 8 = \mathbf{24}$

$7 \times 6 = \mathbf{42}$

$2 \times 5 = \mathbf{10}$

2. **Factors** are the numbers that are multiplied together to give a product.

Find each missing factor.

$9 \times \mathbf{6} = 54$

$\mathbf{3} \times 4 = 12$

$\mathbf{5} \times 6 = 30$

Each of the multiplication sentences above is an example of a basic fact. You can use basic facts and patterns to multiply multiples of 10.

Look for a pattern in the number of zeros in the factors and the products.

3. $3 \times 6 = 18$ ← Basic fact

$$\begin{array}{ccccccc} 30 & \times & 60 & = & 1,800 \\ \uparrow & & \uparrow & & \uparrow \end{array}$$

1 zero + **1** zero = 2 zeros inserted after the product of the basic fact.

4. $4 \times 5 = 20$ ← Basic fact

$$\begin{array}{ccccccc} 40 & \times & 50 & = & 2,000 \\ \uparrow & & \uparrow & & \uparrow \end{array}$$

1 zero + **1** zero = **2** zeros inserted after the product of the basic fact.

Use a basic fact and a pattern to multiply.

5. $6 \times 7 = 42$

$60 \times 7 = \mathbf{420}$

$60 \times 70 = \mathbf{4,200}$

6. $8 \times 9 = \mathbf{72}$

$80 \times 9 = \mathbf{720}$

$80 \times 90 = \mathbf{7,200}$

On the Back!

7. Use basic facts and patterns to find 30×30 . **900**

Name _____

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 _____ groups of 10.

There are _____ 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.

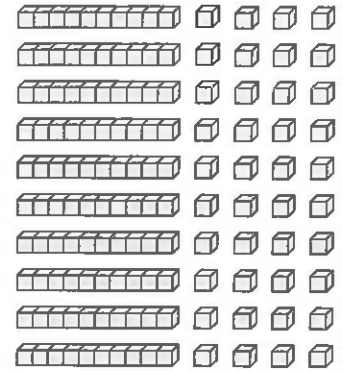
Find the product of 10×14 .

$$\begin{array}{r}
 10 \\
 + 4 \\
 \hline
 \end{array}$$

← 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 20×15 .

3. There are _____ groups of 10.

There are _____ groups of _____.

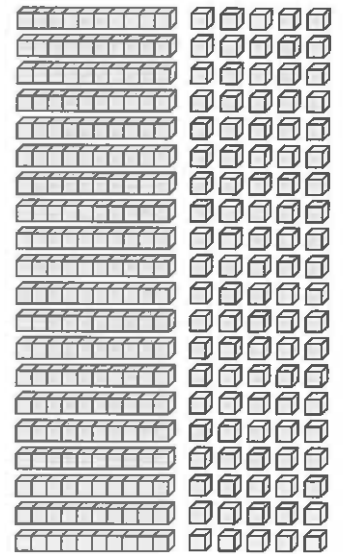
Find the partial products.

$$20 \times 10 = \underline{\hspace{2cm}} \quad 20 \times \underline{\hspace{1cm}} = \underline{\hspace{2cm}}$$

Add the partial products.

$$\underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$

So, $20 \times 15 = \underline{\hspace{2cm}}$.



4. Draw an array to find the product of 30×26 .

$$30 \text{ groups of } 20 = \underline{\hspace{2cm}} \quad 30 \text{ groups of } 6 = \underline{\hspace{2cm}}$$

$$\underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$$

So, $30 \times 26 = \underline{\hspace{2cm}}$.

On the Back!

5. Draw an array to find the product of 40×21 .

Vocabulary

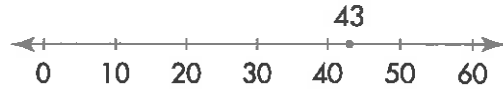
1. An **estimate** tells about how many or about how much. It is an approximate value rather than an exact answer.

$3 \times 12 =$ _____ Estimate: $3 \times 10 =$ _____

2. **Rounding** is a process that determines which multiple, of 10, 100, 1,000, and so on, a number is closest to.

43 is closer to _____ than to _____.

43 rounds to _____.



3. Estimate the product of 18×34 .

Round 18 to the nearest ten.

18 is closer to _____ than to 10.

Round 34 to the nearest ten.

34 is closer to _____ than to _____.

18×34 rounds to _____ \times _____ = _____.

So, 18×34 is about _____.

4. Estimate the product of 73×47 .

Round 73 to the nearest ten.

73 is closer to _____ than to _____.

Round 47 to the nearest ten.

47 is closer to _____ than to _____.

73×47 rounds to _____ \times _____ = _____.

So, 73×47 is about _____.

5. 55×26 rounds to _____ \times _____.

So, 55×26 is about _____.

On the Back!

6. Use rounding to estimate the product of 39×22 .

Vocabulary

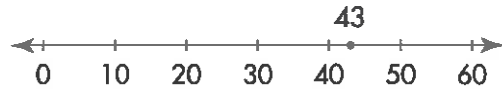
1. An **estimate** tells about how many or about how much. It is an approximate value rather than an exact answer.

$$3 \times 12 = \underline{36} \qquad \text{Estimate: } 3 \times 10 = \underline{30}$$

2. **Rounding** is a process that determines which multiple, of 10, 100, 1,000, and so on, a number is closest to.

43 is closer to **40** than to **50**.

43 rounds to **40**.



3. Estimate the product of 18×34 .

Round 18 to the nearest ten.

18 is closer to **20** than to 10.

Round 34 to the nearest ten.

34 is closer to **30** than to **40**.

18×34 rounds to **$20 \times 30 = 600$** .

So, 18×34 is about **600**.

4. Estimate the product of 73×47 .

Round 73 to the nearest ten.

73 is closer to **70** than to **80**.

Round 47 to the nearest ten.

47 is closer to **50** than to **40**.

73×47 rounds to **$70 \times 50 = 3,500$** .

So, 73×47 is about **3,500**.

5. 55×26 rounds to **60×30** .

So, 55×26 is about **1,800**.

On the Back!

6. Use rounding to estimate the product of 39×22 .

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

Vocabulary

- 1. Compatible numbers** are numbers that are easy to compute mentally. You can use compatible numbers to estimate.

Use compatible numbers to estimate 26×31 .
26 is close to 25, and 31 is close to 30.

So, 26×31 is about 25×30 .

Remember to look for multiplication patterns.

$25 \times 3 = \underline{\quad}$, so $25 \times 30 = \underline{\quad}$.

26×31 is about $\underline{\quad}$.

- 2.** Use compatible numbers to estimate 27×42 .

Find compatible numbers.

27 is close to $\underline{\quad}$.

42 is close to 40.

Use number patterns to multiply the compatible numbers.

$\underline{\quad} \times 4 = \underline{\quad}$

$\underline{\quad} \times 40 = \underline{\quad}$

27×42 is about $\underline{\quad}$.

- 3.** Use compatible numbers to estimate 46×68 .

46 is close to $\underline{\quad}$.

68 is close to $\underline{\quad}$.

46×68 is about $\underline{\quad} \times \underline{\quad} = \underline{\quad}$.

- 4.** 79×12 is about $\underline{\quad} \times \underline{\quad} = \underline{\quad}$.

- 5.** 95×11 is about $\underline{\quad} \times \underline{\quad} = \underline{\quad}$.

On the Back!

- 6.** Use compatible numbers to estimate 27×19 .

Vocabulary

1. **Compatible numbers** are numbers that are easy to compute mentally. You can use compatible numbers to estimate.

Use compatible numbers to estimate 26×31 .
26 is close to 25, and 31 is close to 30.

So, 26×31 is about 25×30 .

Remember to look for multiplication patterns.

$$25 \times 3 = 75, \text{ so } 25 \times 30 = 750.$$

$$26 \times 31 \text{ is about } 750.$$

2. Use compatible numbers to estimate 27×42 . **Sample answers given.**

Find compatible numbers.

$$27 \text{ is close to } 25.$$

$$42 \text{ is close to } 40.$$

Use number patterns to multiply the compatible numbers.

$$25 \times 4 = 100$$

$$25 \times 40 = 1,000$$

$$27 \times 42 \text{ is about } 1,000.$$

3. Use compatible numbers to estimate 46×68 .

$$46 \text{ is close to } 50.$$

$$68 \text{ is close to } 70.$$

$$46 \times 68 \text{ is about } 50 \times 70 = 3,500.$$

4. 79×12 is about $80 \times 10 = 800$.

5. 95×11 is about $95 \times 10 = 950$.

On the Back!

6. Use compatible numbers to estimate 27×19 .

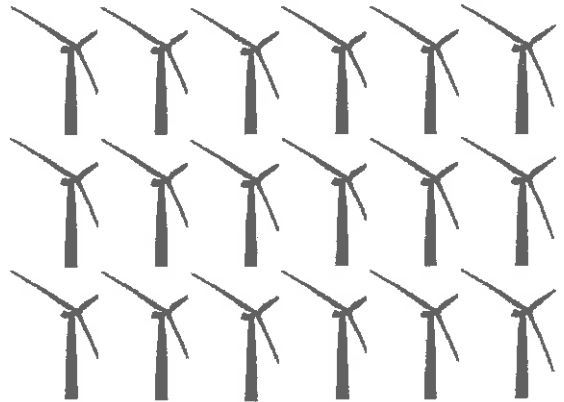
$$\text{Sample answer: } 25 \times 20 = 500$$

Name _____

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 _____

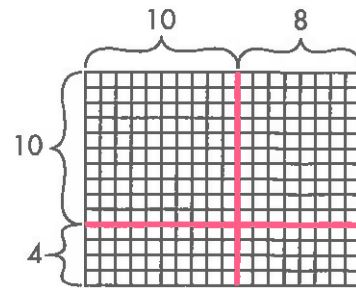
Reteach to Build Understanding

4-5

Vocabulary

1. An **array** is a model used to display objects in rows and columns. You can use an array to find the product of two 2-digit numbers.

The array at the right represents 14×18 . Draw lines through the array to show the tens and ones in each factor.



2. Use the array for 14×18 to find each partial product.

$$10 \times 10 = \mathbf{100}$$

$$10 \times 8 = \mathbf{80}$$

$$4 \times 10 = \mathbf{40}$$

$$4 \times 8 = \mathbf{32}$$

Add the partial products to find the product of 14×18 .

$$\mathbf{100} + \mathbf{80} + \mathbf{40} + \mathbf{32} = \mathbf{252}$$

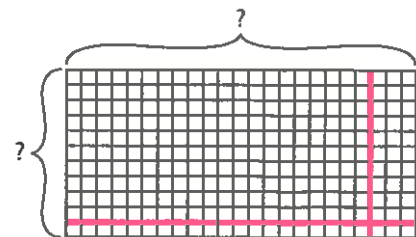
$$\text{So, } 14 \times 18 = \mathbf{252}.$$

3. What two factors are shown by the array at the right?

$$\mathbf{11} \times \mathbf{23}$$

Draw lines through the array to show the tens and ones in each factor.

Find each partial product, and then add to find the product. $\mathbf{11} \times \mathbf{23} = \mathbf{253}$



4. Draw an array to find the product of 17×17 .

Check students' work.

$$17 \times 17 = \mathbf{289}$$

On the Back!

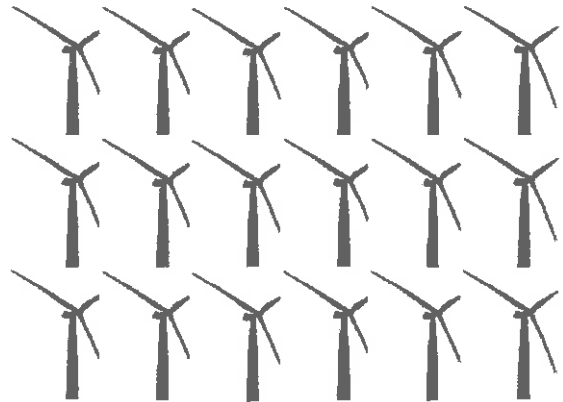
5. Draw an array to find the product of 12×27 .

324; Check students' work.

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.

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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
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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 _____

Reteach to Build
Understanding

4-6

Vocabulary

1. The **Distributive Property** states that multiplying a sum by a number is the same as multiplying each number in the sum by that number and adding the products.

Rewrite 36×15 using the Distributive Property.

$$\begin{aligned} 36 \times 15 &= (30 + 6) \times (10 + 5) \\ &= (30 + 6) \times 10 + (30 + 6) \times 5 \\ &= (30 \times \quad) + (6 \times \quad) + (30 \times \quad) + (6 \times \quad) \end{aligned}$$

2. Use the area model and the Distributive Property to find 24×19 .

Break apart 24 and 19.

$$24 \times 19 = (\quad + 4) \times (\quad + 9)$$

Multiply $(20 + 4)$ by 10. Multiply $(20 + 4)$ by 9.

$$= (20 + 4) \times \quad + (20 + 4) \times \quad$$

Distribute both the 10 and the 9.

$$\begin{aligned} &= (20 \times \quad) + (4 \times \quad) + (20 \times \quad) + (4 \times \quad) \\ &= \quad + \quad + \quad + \quad \\ &= \quad \end{aligned}$$

	10	+	9
20	20×10		20×9
+			
4	4×10		4×9

3. Draw an area model and use the Distributive Property to find 32×21 .

$$32 \times 21 =$$

4. Use the Distributive Property to find 19×19 .

$$19 \times 19 =$$

On the Back!

5. Draw an area model and use the Distributive Property to find 13×28 .

Vocabulary

1. The **Distributive Property** states that multiplying a sum by a number is the same as multiplying each number in the sum by that number and adding the products.

Rewrite 36×15 using the Distributive Property.

$$\begin{aligned} 36 \times 15 &= (30 + 6) \times (10 + 5) \\ &= (30 + 6) \times 10 + (30 + 6) \times 5 \\ &= (30 \times \mathbf{10}) + (6 \times \mathbf{10}) + (30 \times \mathbf{5}) + (6 \times \mathbf{5}) \end{aligned}$$

2. Use the area model and the Distributive Property to find 24×19 .

Break apart 24 and 19.

$$24 \times 19 = (\mathbf{20} + 4) \times (\mathbf{10} + 9)$$

Multiply $(20 + 4)$ by 10. Multiply $(20 + 4)$ by 9.

$$= (20 + 4) \times \mathbf{10} + (20 + 4) \times \mathbf{9}$$

Distribute both the 10 and the 9.

$$\begin{aligned} &= (20 \times \mathbf{10}) + (4 \times \mathbf{10}) + (20 \times \mathbf{9}) + (4 \times \mathbf{9}) \\ &= \mathbf{200} + \mathbf{40} + \mathbf{180} + \mathbf{36} \\ &= \mathbf{456} \end{aligned}$$

	10	+	9
20	20×10		20×9
+			
4	4×10		4×9

3. Draw an area model and use the Distributive Property to find 32×21 .
Check students' work.

$$32 \times 21 = \mathbf{672}$$

4. Use the Distributive Property to find 19×19 .
Check students' work.

$$19 \times 19 = \mathbf{361}$$

On the Back!

5. Draw an area model and use the Distributive Property to find 13×28 .
364; Check students' work.

Vocabulary

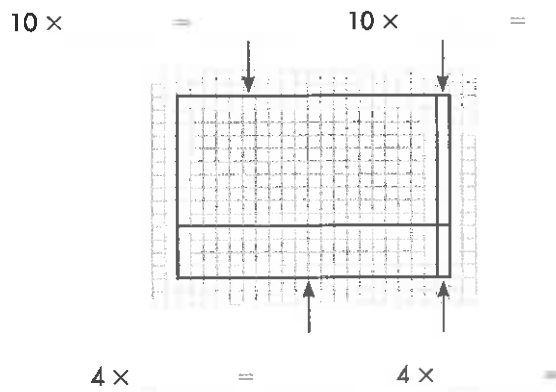
1. Partial products are products found by multiplying each place value of both factors.

This area model shows

_____ × _____ .

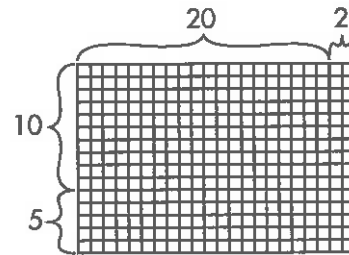
Each area represents a different partial product. Complete each equation.

What are the partial products?



2. The area model shows 15×22 .

What are the partial products?



3. Multiply the ones. Then, multiply the tens.

$$\begin{array}{r} 22 \\ \times 15 \\ \hline \end{array}$$

- ← What is 5×2 ?
- ← What is 5×20 ?
- ← What is 10×2 ?
- ← What is 10×20 ?
- ← Add the partial products.

4.

$$\begin{array}{r} 12 \\ \times 14 \\ \hline \end{array}$$

- ← What is _____ $\times 2$?
- ← What is $4 \times$ _____ ?
- ← What is _____ \times _____ ?
- ← What is _____ \times _____ ?
- ← Add the partial products.

On the Back!

5. Draw an area model for 13×18 . Use your area model to find the partial products and solve.

Vocabulary

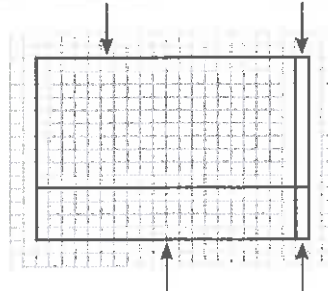
1. Partial products are products found by multiplying each place value of both factors.

$10 \times 20 = 200$ $10 \times 1 = 10$

This area model shows

14×21

Each area represents a different partial product. Complete each equation.



$4 \times 20 = 80$ $4 \times 1 = 4$

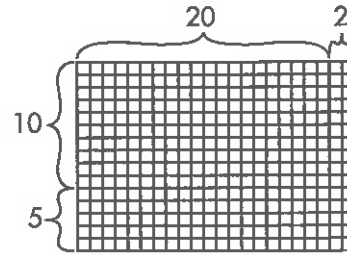
What are the partial products?

4, 10, 80, and 200

2. The area model shows 15×22 .

What are the partial products?

10, 20, 100, and 200



3. Multiply the ones. Then, multiply the tens.

$$\begin{array}{r}
 22 \\
 \times 15 \\
 \hline
 10 \leftarrow \text{What is } 5 \times 2? \\
 100 \leftarrow \text{What is } 5 \times 20? \\
 20 \leftarrow \text{What is } 10 \times 2? \\
 + 200 \leftarrow \text{What is } 10 \times 20? \\
 \hline
 330 \leftarrow \text{Add the partial products.}
 \end{array}$$

4.

$$\begin{array}{r}
 12 \\
 \times 14 \\
 \hline
 8 \leftarrow \text{What is } 4 \times 2? \\
 40 \leftarrow \text{What is } 4 \times 10? \\
 20 \leftarrow \text{What is } 10 \times 2? \\
 + 100 \leftarrow \text{What is } 10 \times 10? \\
 \hline
 168 \leftarrow \text{Add the partial products.}
 \end{array}$$

On the Back!

5. Draw an area model for 13×18 . Use your area model to find the partial products and solve.

234; Check students' work.

Name _____

Reteach to Build
Understanding

4-8

Vocabulary

1. A **multiple** is the product of a given whole number and any non-zero whole number. Multiples of 10 are the numbers you say when you count by 10s.

Multiples of 10:

$10 \times 1 =$

$10 \times 6 =$

$10 \times 2 =$

$10 \times 7 =$

$10 \times 3 =$

$10 \times 8 =$

$10 \times 4 =$

$10 \times 9 =$

$10 \times 5 =$

$10 \times 10 =$

2. Label the grid to model 30×18 .
Break apart 18 into tens and ones.

$18 = \quad + \quad$

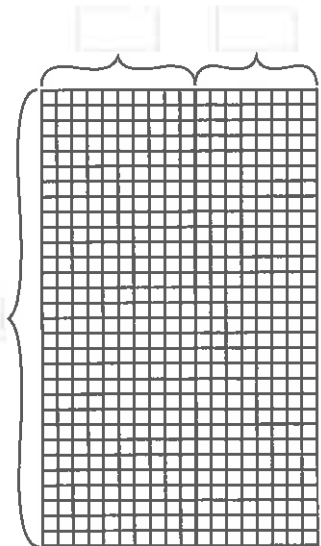
Find the partial products for 30×18 .

$30 \times \quad =$

$30 \times \quad =$

Add the partial products.

$\quad + \quad =$



3. Now find 30×18 using an algorithm.
Complete the multiplication at the right.

Think of 30 as 3 tens.

When multiplying by tens, record a 0 in the ones place of the product. Then, multiply by the 3, using an algorithm.

$$\begin{array}{r} 18 \\ \times 30 \\ \hline \end{array}$$

Multiply to find the product. Draw models as needed.

4. $20 \times 39 =$

5. $30 \times 16 =$

6. $50 \times 37 =$

On the Back!

7. Find 20×21 .

Name _____

Reteach to Build
Understanding

4-8

Vocabulary

1. A **multiple** is the product of a given whole number and any non-zero whole number. Multiples of 10 are the numbers you say when you count by 10s.

Multiples of 10:

$10 \times 1 = 10$

$10 \times 6 = 60$

$10 \times 2 = 20$

$10 \times 7 = 70$

$10 \times 3 = 30$

$10 \times 8 = 80$

$10 \times 4 = 40$

$10 \times 9 = 90$

$10 \times 5 = 50$

$10 \times 10 = 100$

2. Label the grid to model 30×18 .
Break apart 18 into tens and ones.

$18 = 10 + 8$

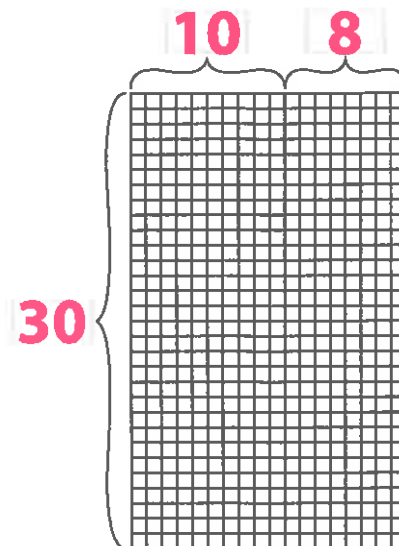
Find the partial products for 30×18 .

$30 \times 10 = 300$

$30 \times 8 = 240$

Add the partial products.

$300 + 240 = 540$



3. Now find 30×18 using an algorithm.
Complete the multiplication at the right.

Think of 30 as 3 tens.

When multiplying by tens, record a 0 in the ones place of the product. Then, multiply by the 3, using an algorithm.

$$\begin{array}{r} 2 \\ 18 \\ \times 30 \\ \hline 540 \end{array}$$

Multiply to find the product. Draw models as needed.

4. $20 \times 39 = 780$

5. $30 \times 16 = 480$

6. $50 \times 37 = 1,850$

On the Back!

7. Find 20×21 . **420**

Vocabulary

1. An **algorithm** is a set of steps used to solve a math problem.

To find 24×6 , you can use an algorithm.

$$\begin{array}{r} 2 \\ 24 \\ \times 6 \\ \hline \end{array}$$

Multiply the ones.

Regroup if necessary.

Multiply the tens.

Add any extra tens.

2. Find 32×18 . Use an algorithm.

Step 1 Multiply by the ones. Regroup.

$$\begin{array}{r} 18 \\ \times 32 \\ \hline \end{array}$$

2×8 ones = 16 ones

Regroup 16 ones as 1 ten, 6 ones.

2×1 ten = 2 tens

2 tens + 1 ten = 3 tens

Step 2 Multiply by the tens. Regroup.

$$\begin{array}{r} 18 \\ \times 32 \\ \hline + \\ \hline \end{array}$$

30×8 ones = 240 ones or 24 tens

Regroup 24 tens as 2 hundreds, 4 tens.

30×1 ten = 30 tens or 3 hundreds

3 hundreds + 2 hundreds = 5 hundreds

Step 3 Add the partial products.

$$\begin{array}{r} 18 \\ \times 32 \\ \hline + \\ \hline \end{array}$$

Use an algorithm to find the product.

3. $76 \times 49 =$ _____

4. $84 \times 65 =$ _____

On the Back!

5. Find 38×87 . Show your work.

42 Vocabulary

1. An **algorithm** is a set of steps used to solve a math problem.

To find 24×6 , you can use an algorithm.

$$\begin{array}{r} 2 \\ 24 \\ \times 6 \\ \hline 144 \end{array}$$

Multiply the ones.

Regroup if necessary.

Multiply the tens.

Add any extra tens.

2. Find 32×18 . Use an algorithm.

Step 1 Multiply by the ones. Regroup.

$$\begin{array}{r} 1 \\ 18 \\ \times 32 \\ \hline 36 \end{array}$$

2×8 ones = 16 ones

Regroup 16 ones as 1 ten, 6 ones.

2×1 ten = 2 tens

2 tens + 1 ten = 3 tens

Step 2 Multiply by the tens. Regroup.

$$\begin{array}{r} 2 \\ 18 \\ \times 32 \\ \hline 36 \\ + 540 \\ \hline \end{array}$$

30×8 ones = 240 ones or 24 tens

Regroup 24 tens as 2 hundreds, 4 tens.

30×1 ten = 30 tens or 3 hundreds

3 hundreds + 2 hundreds = 5 hundreds

Step 3 Add the partial products.

$$\begin{array}{r} 18 \\ \times 32 \\ \hline 36 \\ + 540 \\ \hline 576 \end{array}$$

Use an algorithm to find the product.

3. $76 \times 49 = 3,724$

4. $84 \times 65 = 5,460$

On the Back!

5. Find 38×87 . Show your work. **3,306; Check students' work.**

Name _____

Vocabulary

1. An **estimate** is an approximate number. Rounding is one way to estimate a product. Estimation can help determine if an answer is reasonable.

Use rounding to estimate 31×79 .

_____ \times _____ = _____

Use an algorithm to find the product.

2. Multiply 7 ones by 23.

$$\begin{array}{r} 23 \\ \times 67 \\ \hline \end{array}$$

Multiply 6 tens by 23.

$$\begin{array}{r} 23 \\ \times 67 \\ \hline 161 \end{array}$$

Add the partial products.

$$\begin{array}{r} 23 \\ \times 67 \\ \hline 161 \\ + 1,380 \\ \hline \end{array}$$

Use estimation to check if the answer is reasonable.

23 rounds to _____ .

67 rounds to _____ .

$70 \times 20 =$ _____

_____ is close to _____ .

The answer is _____ .

Use an algorithm to find each product. Use estimation to check if your answer is reasonable.

3. $84 \times 73 =$ _____

4. $19 \times 57 =$ _____

5. $56 \times 48 =$ _____

6. $22 \times 93 =$ _____

On the Back!

7. Use an algorithm to find 84×47 . Use estimation to check if your answer is reasonable.

Name _____

 **Vocabulary**

1. An **estimate** is an approximate number. Rounding is one way to estimate a product. Estimation can help determine if an answer is reasonable.

Use rounding to estimate 31×79 .

$$\underline{30} \times \underline{80} = \underline{2,400}$$

Use an algorithm to find the product.

2. Multiply 7 ones by 23.

$$\begin{array}{r} 2 \\ 23 \\ \times 67 \\ \hline 161 \end{array}$$

- Multiply 6 tens by 23.

$$\begin{array}{r} 1 \\ 23 \\ \times 67 \\ \hline 161 \\ 1,380 \end{array}$$

- Add the partial products.

$$\begin{array}{r} 23 \\ \times 67 \\ \hline 161 \\ + 1,380 \\ \hline 1,541 \end{array}$$

Use estimation to check if the answer is reasonable.

23 rounds to 20.

67 rounds to 70.

$$70 \times 20 = \underline{1,400}$$

1,541 is close to 1,400.

The answer is **reasonable**.

Use an algorithm to find each product. Use estimation to check if your answer is reasonable.

3. $84 \times 73 = \underline{6,132}$

4. $19 \times 57 = \underline{1,083}$

5. $56 \times 48 = \underline{2,688}$

6. $22 \times 93 = \underline{2,046}$

On the Back!

7. Use an algorithm to find 84×47 . Use estimation to check if your answer is reasonable. **3,948; Check students' work.**

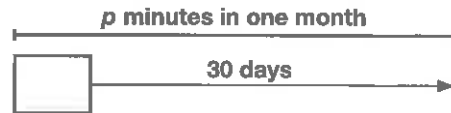
Vocabulary

1. A **variable** is a symbol or letter that stands for a number.

Jimmy practices playing the piano for 30 minutes each day, 30 days each month. How many minutes does Jimmy practice playing the piano in one month?

Complete the bar diagram.

Write a multiplication equation for the bar diagram. Let p represent the number of minutes Jimmy practices each month.



$p = 30 \times \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$

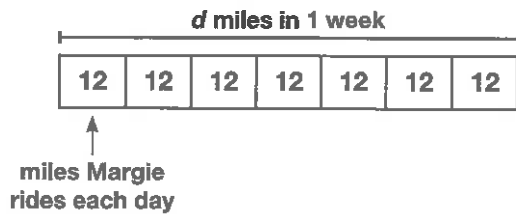
Jimmy practices playing piano _____ minutes in one month.

Margie is training for a bike race. She rides her bike 12 miles every day. If there are 12 weeks until the race, how many miles will Margie ride before the race?

2. Make a plan to solve the problem.

Step 1: First, use a bar diagram to help find the number of miles Margie rides in 1 week.

$d = \underline{\hspace{1cm}} \times \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$



Step 2: Now, find the total miles Margie will ride in 12 weeks.

$m = \underline{\hspace{1cm}} \times \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$



Margie will ride _____ miles before the race.

3. Cami performs 18 back handsprings during a routine. If she practices the routine 13 times, how many back handsprings does Cami perform? Draw a bar diagram and write an equation to solve.

On the Back!

4. Yuri made 12 fruit bouquets as gifts. Each bouquet used 5 oranges, 4 apples, and 2 bananas. How many pieces of fruit did Yuri use to make all 12 fruit bouquets?

Vocabulary

1. A **variable** is a symbol or letter that stands for a number.

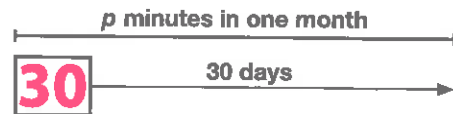
Jimmy practices playing the piano for 30 minutes each day, 30 days each month. How many minutes does Jimmy practice playing the piano in one month?

Complete the bar diagram.

Write a multiplication equation for the bar diagram. Let p represent the number of minutes Jimmy practices each month.

$$p = 30 \times \underline{30} = \underline{900}$$

Jimmy practices playing piano **900** minutes in one month.



Margie is training for a bike race. She rides her bike 12 miles every day. If there are 12 weeks until the race, how many miles will Margie ride before the race?

2. Make a plan to solve the problem.

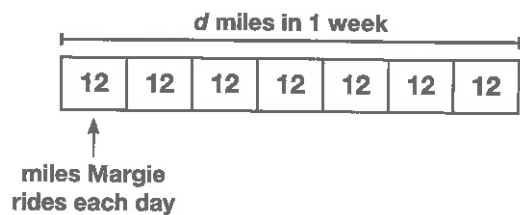
Step 1: First, use a bar diagram to help find the number of miles Margie rides in 1 week.

$$d = \underline{12} \times \underline{7} = \underline{84}$$

Step 2: Now, find the total miles Margie will ride in 12 weeks.

$$m = \underline{84} \times \underline{12} = \underline{1,008}$$

Margie will ride **1,008** miles before the race.



3. Cami performs 18 back handsprings during a routine. If she practices the routine 13 times, how many back handsprings does Cami perform? Draw a bar diagram and write an equation to solve.

234 back handsprings; Check students' work

On the Back!

4. Yuri made 12 fruit bouquets as gifts. Each bouquet used 5 oranges, 4 apples, and 2 bananas. How many pieces of fruit did Yuri use to make all 12 fruit bouquets?

132 pieces of fruit

Word List

- array
- compatible numbers
- estimate
- factors
- partial product
- product
- rounding
- variable

Understand Vocabulary

1. Cross out the numbers that are **NOT** factors of 12.

1 3 5 6 8

2. Cross out the numbers that are **NOT** good estimates for 17×23 .

600 400 300 200 100

3. Cross out the numbers that are **NOT** partial products for 12×41 .

2 10 18 80 400

Label each example with a term from the Word List.



5. n

6. 2,318 to the nearest thousand is 2,000

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

Use Vocabulary in Writing

8. Alicia needs to find 23×47 . Use at least 3 terms from the Word List to explain how Alicia might find 23×47 .