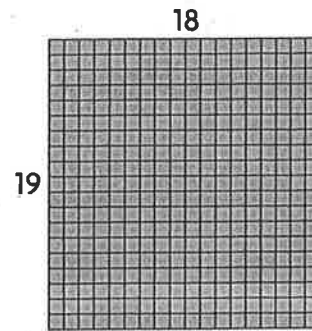# Area Models and Partial Products

You can use area models to multiply 2-digit numbers by 2-digit numbers.

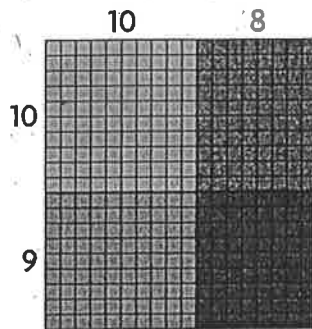**Use the model and partial products to solve.**

Draw a rectangle to find 19 × 18.

The rectangle is 19 units long and 18 units wide.

18

19

Step 1 Break apart the factors into tens and ones. Divide the area model into four smaller rectangles to show the factors.

10   8

10

9

Step 2 Find the products for each of the smaller rectangles.

$10 \times 10 = 100$ $10 \times 8 = 80$ $9 \times 10 = 90$ $9 \times 8 = 72$

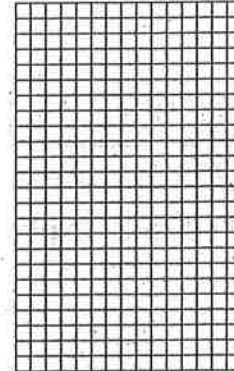**Step 3** Find the sum of the products. $100 + 80 + 90 + 72 = 342$
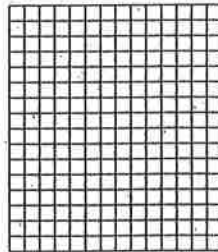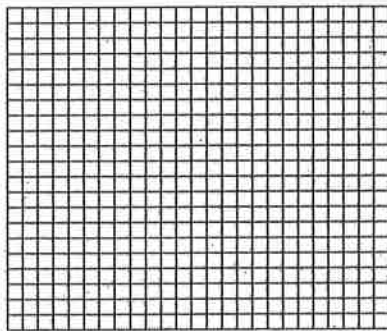
So, $19 \times 18 = 342$.

Draw a model to represent the product. Then record the product.

1. 21×25

2. 16×14

3. 24×15

_____   _____   _____

Number and Operations in Base Ten

Area Models and Partial Products

Draw a model to represent the product.
Then record the product.

1. 13×42

	40	2
10	400	20
3	120	6

$400 + 20 + 120 + 6 = \underline{\textbf{546}}$

2. 18×34

3. 22×26

4. 15×33

5. 23×29

6. 19×36

Problem Solving REAL WORLD

7. Sebastian made the following model to find the product 17×24.

	20	4
10	200	40
7	14	28

$200 + 40 + 14 + 28 = 282$

Is his model correct? **Explain.**

_____

_____

8. Each student in Ms. Sike's kindergarten class has a box of crayons. Each box has 36 crayons. If there are 18 students in Ms. Sike's class, how many crayons are there in all?