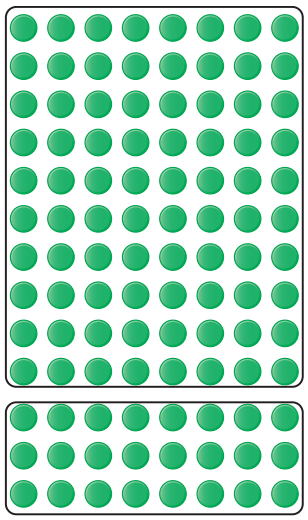
Using Mental Math to Multiply

Practice

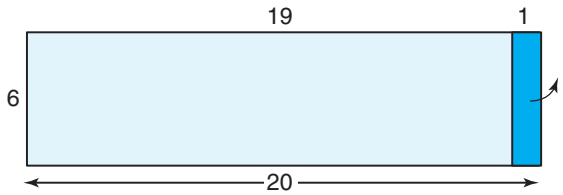
Use mental math.

1. Which product does each diagram represent?
Use the diagram to find the product.

a)



b)

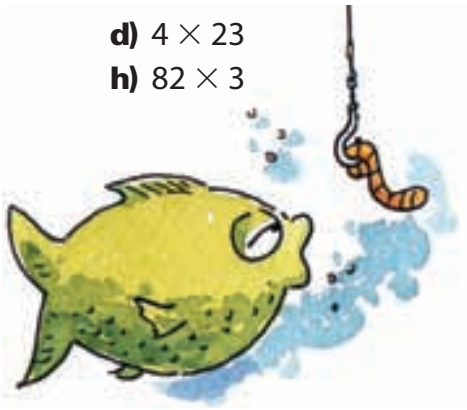


2. Multiply. Picture an array each time.

a) 18×5 **b)** 23×7 **c)** 6×31 **d)** 4×23

e) 8×44 **f)** 9×29 **g)** 2×78 **h)** 82×3

3. Eighteen students went on a fishing trip.
Each student had 6 worms as bait.
How many worms were there altogether?



4. To find 28×25, a student wrote this:

$$28 \times 25 = 7 \times 4 \times 25$$
$$= 7 \times 100$$
$$= 700$$

Explain the student's strategy.

5. Multiply. Explain how you could use halving and doubling.

a) 12×50 **b)** 12×25 **c)** 24×25 **d)** 24×50

e) 46×25 **f)** 23×25 **g)** 46×50 **h)** 23×50

6. Jamal bought thirty-eight 50¢ stamps.
What was the cost before tax?

7. Multiply. Use mental math. Explain your strategy.

a) 6×199 **b)** 7×302 **c)** 3×498 **d)** 5×310

e) 3×503 **f)** 101×4 **g)** 4×210 **h)** 197×5

8. Who Has the Greater Product?

Game

You will need a set of digit cards from 0 to 9.
The goal is to arrange 4 digits to make
a multiplication problem with the greatest product.
Each player copies and completes the multiplication grid.

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

Take turns drawing one card.
As each card is selected, each player writes that digit
in any box on her or his grid.
Continue until all the boxes have been filled.
Multiply.
The player with the greater product scores a point.
The first player to score 5 points wins.

9. List the strategies you used to play the game
Who Has the Greater Product?

10. Use mental math.
Find the product of 48 × 50 two different ways.
Describe the strategies you used.

11. A theatre has 32 rows of seats.
Each row has 25 seats.
How many seats are there in the theatre?

12. Copy the multiplication frame at the right.
Arrange the digits 2, 3, 4, and 5 to make the greatest product.
Use each digit only once.
How did you decide how to arrange the digits?

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

13. Write a multiplication problem that can be solved
using mental math. Solve the problem.
Which strategy did you use? Why?

Reflect

Which of these mental math strategies do you find easiest?
Tell why.

- breaking the number into parts
- halving and doubling
- compatible numbers and compensation