

Chapter 6
Lesson 1

Multiplication Strategies

You will need

- counters
- a blank multiplication table

GOAL

Multiply one-digit numbers using mental math strategies.

Owen swims six days a week.



? How many days does Owen swim in February?



Owen's Strategy

There are exactly four weeks in February.
I swim six times a week, so the number of days is 4×6 .
I can skip count up from $2 \times 6 = 12$.

I need to add two more 6s.

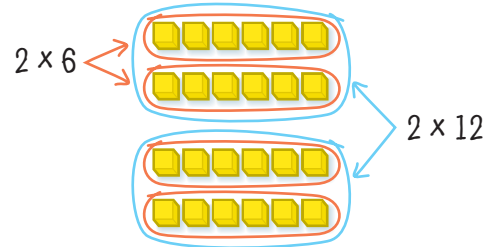
$$\begin{array}{ccc} & +6 & +6 \\ 12 & 18 & 24 \end{array}$$

I swim 24 days in February.



Ami's Strategy

To calculate 4×6 , I'll double 6 to get 2×6 , and then double again.



Communication Tip

You can say "double" to mean the same as "multiply by 2."

$$2 \times 6 = 12$$

$$2 \times 12 = 24$$

$$4 \times 6 = 24$$

The product is 24.

Owen swims 24 days in February.



Justine's Strategy

If February were five weeks long, there would be $5 \times 6 = 30$ swim days.

But February is only four weeks long, so there are six fewer swim days.

$$4 \times 6 = 30 - 6$$

$$4 \times 6 = 24$$

Owen swims 24 days in February.

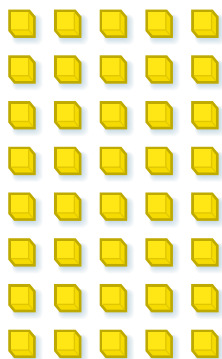
Reflecting

- A. Owen related 4×6 to 2×6 .
Justine related 4×6 to 5×6 .
How can you relate 4×6 to 3×6 instead?
- B. Ami doubled 2×6 to get 4×6 . What other multiplication facts can you calculate by doubling?

Checking

- Calculate 7×3 in two ways using other $\times 3$ facts.
 - Calculate 6×6 using 3×6 .
- Aaron practises piano five times a week. How many times does he practise in February?

Practising



- Describe a strategy for calculating each **product**. Then write the product.
 - 7×6
 - 6×5
- Sketch an 8-by-5 array. Show how to use it to calculate 8×5 each way.
 - $6 \times 5 + 5 + 5$
 - double 4×5
- Sara is in school six hours a day. How many hours a week is she in school?



- Calculate.
 - 3×7
 - 8×4
 - 7×2
 - 5×7
- Use a sketch to show that each equation is true.
 - $5 \times 3 = \text{half of } 10 \times 3$
 - $1 \times 4 = 4$
 - $7 \times 0 = 0$
 - $8 \times 3 = 4 \times 6$

8. There are seven days in a week. How many days are in eight weeks? Describe your calculation strategy.

Sun.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
						
Walk the dog.	Do math homework.	Play soccer.	Help with supper.	Have piano lesson.	Go to BBQ in park.	Swim in pool.



9. Calculate.
a) 7×4 **b)** 0×8 **c)** 9×5 **d)** 2×8
10. Five students each raised a hand to answer a question. How many fingers and thumbs were in the air?
11. **a)** How much more is 6×9 than 3×9 ? How do you know?
b) How much more is 7×7 than 5×7 ? How do you know?
12. Show that $4 \times 7 = 28$ using two different strategies.
13. Use a blank multiplication table. Fill in the products you figured out or used in this lesson.

\times	0	1	2	3	4	5	6	7	8	9
0										
1										
2										
3										
4										

14. Elliott says that there are at least three ways to figure out any multiplication fact. Do you agree? Explain, using a fact of your choice.

1. counting up from a fact you know
2. counting down from a fact you know