

## Multiplication Facts and Strategies

Learning the multiplication facts from  $0 \times 0$  through  $10 \times 10$  is one of the most useful things a third grader does. Strategies like doubling, skip-counting, and the “9 trick” make them easier to remember.

Strategy	Example
Skip-count by the smaller number	$3 \times 4$ : count by 3's four times (3, 6, 9, 12)
Double a known fact	$6 \times 6$ : double $3 \times 6 = 18$ to get 36
The $\times 9$ trick	$9 \times 7$ : $10 \times 7 - 7 = 70 - 7 = 63$
Break apart (distributive)	$7 \times 8$ : $5 \times 8 + 2 \times 8 = 40 + 16 = 56$

### Key Concepts

- Skip-counting** is your first multiplication strategy. To find  $3 \times 4$ , count by 3's four times: 3, 6, 9, 12.
- Doubling** lets you build on a fact you already know. If  $3 \times 6 = 18$ , then  $6 \times 6$  is just double that: 36.
- The  **$\times 9$  trick**:  $9 \times n$  equals  $10n - n$ . So  $9 \times 7 = 70 - 7 = 63$ . Quick and almost foolproof.
- Aim for *automatic* recall of  $0 \times 0$  through  $10 \times 10$ . Strategies are great when you forget, but knowing them by heart is even better.


### Worked Examples

①  $7 \times 8$

 The “hardest” facts often respond to a break-apart strategy. Split 7 into  $5 + 2$ . Then  $7 \times 8 = (5 \times 8) + (2 \times 8) = 40 + 16 = 56$ . The two pieces are both easy: 5's are half of 10, and doubling is easy. Add them and you have your answer.

 **Answer:** 56

②  $9 \times 6$

 Use the  $\times 9$  trick. Replace 9 with 10, multiply, then subtract one copy of the other number:  $10 \times 6 = 60$ , then  $60 - 6 = 54$ . So  $9 \times 6 = 54$ . This works every time you multiply by 9.

 **Answer:** 54

③  $4 \times 8$

 Multiplying by 4 is the same as doubling twice. Start with 8, double it: 16. Double again: 32. That is because  $4 = 2 \times 2$ , so  $4 \times 8 = 2 \times 2 \times 8$ . Doubling is fast and rarely goes wrong.

 **Answer:** 32

### Practice Problems

Find each product. Use any strategy that works for you.

- |                 |       |                  |       |
|-----------------|-------|------------------|-------|
| 1. $3 \times 7$ | _____ | 7. $6 \times 6$  | _____ |
| 2. $5 \times 9$ | _____ | 8. $2 \times 8$  | _____ |
| 3. $8 \times 6$ | _____ | 9. $10 \times 7$ | _____ |
| 4. $4 \times 4$ | _____ | 10. $8 \times 9$ | _____ |
| 5. $7 \times 5$ | _____ | 11. $4 \times 7$ | _____ |
| 6. $9 \times 3$ | _____ | 12. $6 \times 9$ | _____ |

**Study Tips**

- 👉 Flashcards work — spend 5 minutes a day on the facts you find hardest. Speed comes from repetition, not from a single long session.
- 👉 The  $\times 5$  facts are half of the  $\times 10$  facts.  $5 \times 8$  is half of  $10 \times 8 = 80$ , so it's 40.
- 👉 The  $\times 9$  facts follow a pattern: the digits of the answer add up to 9 ( $9 \times 3 = 27 \rightarrow 2 + 7 = 9$ ). Use it as a check.

**Word Problems**

1. A spider has 8 legs. How many legs do 7 spiders have altogether?

Answer: \_\_\_\_\_

2. Each pack of crayons has 6 crayons. Mrs. Kim buys 9 packs. How many crayons in all?

Answer: \_\_\_\_\_

**Answer Key — with Friendly Explanations****Practice Problems**

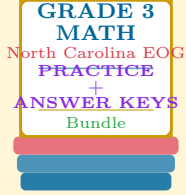
1. Skip-count by 3 seven times: 3, 6, 9, 12, 15, 18, 21.  
 **Answer:** 21
2.  $5 \times 9$  is half of  $10 \times 9 = 90$ , so 45.  
 **Answer:** 45
3.  $8 \times 6 = 5 \times 6 + 3 \times 6 = 30 + 18 = 48$ .  
 **Answer:** 48
4.  $4 \times 4$  is double  $2 \times 4 = 8$ , so 16.  
 **Answer:** 16
5.  $7 \times 5 =$  half of  $7 \times 10 = 70$ , so 35.  
 **Answer:** 35
6.  $\times 9$  trick:  $10 \times 3 - 3 = 27$ .  
 **Answer:** 27
7.  $6 \times 6$  is double  $3 \times 6 = 18$ , so 36.  
 **Answer:** 36
8.  $2 \times 8$  is just double  $8 = 16$ .  
 **Answer:** 16
9. Any number times 10 adds a zero: 70.  
 **Answer:** 70
10.  $\times 9$  trick:  $10 \times 8 - 8 = 72$ .  
 **Answer:** 72
11. Double  $2 \times 7 = 14$  to get  $4 \times 7 = 28$ .  
 **Answer:** 28
12.  $\times 9$  trick:  $10 \times 6 - 6 = 54$ .  
 **Answer:** 54

**Word Problems**

1.  $7 \times 8 = 56$ . Each spider has 8 legs, 7 spiders means 7 groups of 8.  
 **Answer:** 56 legs
2.  $9 \times 6 = 54$ . Nine packs of six crayons each.  
 **Answer:** 54 crayons

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