

Grade 3 · Multiplying by Multiples of 10 · Lesson

Common Core 3.NBT.A.3 · mathovore.fr

To multiply a one-digit number by a multiple of 10, think of the multiple of 10 as tens. For 9×80 , find $9 \times 8 = 72$, so you have 72 tens, and 72 tens is 720. Multiply the basic fact, then write the extra zero for the ten in each group.

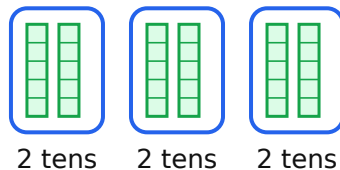
Grade 3 Common Core: 3.NBT.A.3

Key facts:

- A multiple of 10, like 40, is a number of tens: 40 is 4 tens.
- Multiply the basic fact first: $6 \times 4 = 24$, so $6 \times 40 = 240$.
- The product is the number of tens written as a regular number.
- Skip counting by tens and drawing arrays can check the product.

What does it mean to multiply by a multiple of 10?

A **multiple of 10** is a number you get by counting by tens: 10, 20, 30, 40, and so on up to 90. A number such as 30 is 3 tens. So 3×20 means 3 groups of 2 tens, and each ten is worth 10.



3 groups of 2 tens: $3 \times 2 \text{ tens} = 6 \text{ tens} = 60$.

There are 6 rods in all, so there are 6 tens. 6 tens is 60. That means $3 \times 20 = 60$.

Key words

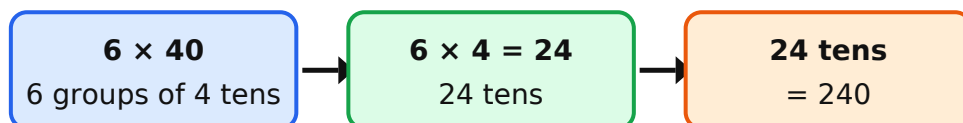
A **multiple of 10** is a product of 10 and a whole number, such as 20, 50, or 80. A **basic fact** is a multiplication fact with factors from 1 to 10, such as $6 \times 4 = 24$. A **product** is the answer to a multiplication problem.

How do you use a basic fact to multiply by 10s?

Treat the tens as the unit you are counting. Here is the method for 9×80 .

1. Write 80 as 8 tens.
2. Multiply the basic fact: $9 \times 8 = 72$. So 9 groups of 8 tens is 72 tens.
3. Say 72 tens as a number: 72 tens is 720.

So $9 \times 80 = 720$. The product is the basic fact with one zero written after it.

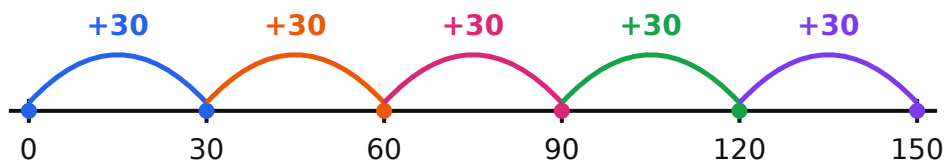


Three steps for 6×40 .

Basic fact	Think	Product
$6 \times 4 = 24$	6×40 is 24 tens	240
$6 \times 5 = 30$	6×50 is 30 tens	300
$6 \times 7 = 42$	6×70 is 42 tens	420

Why does skip counting by tens work?

Each group has the same number of tens. Jumping 5 times by 30 lands on 30, 60, 90, 120, 150. That matches $5 \times 30 = 150$.



Skip counting by 30 five times: $5 \times 30 = 150$.

How can you see the product in an array?

Picture a grid where every square is worth 10. If there are 4 rows with 7 squares in each row, there are $4 \times 7 = 28$ squares. Each square is worth 10, so the total is $28 \times 10 = 280$, which equals 4×70 .

7 tens in each row

4
rows

10	10	10	10	10	10	10
10	10	10	10	10	10	10
10	10	10	10	10	10	10
10	10	10	10	10	10	10

4 rows of 7 tens: $4 \times 70 = 280$.

Watch out: do not forget the tens. 6×40 is 240, not 24. Always say the answer as tens first, then change it to a number.

Multiplying by Multiples of 10: frequently asked questions

What is a multiple of 10?

A multiple of 10 is a number you reach by counting by tens, such as 10, 20, 30, up to 90 and beyond. Every multiple of 10 ends in a zero.

Why does 9×80 equal 720?

80 is 8 tens, and 9 groups of 8 tens is 72 tens. 72 tens is 720. The basic fact $9 \times 8 = 72$ tells you the digits.

Is there a shortcut for multiplying by 10s?

Yes. Multiply the basic fact and write one zero after the product. The zero stands for the ten in each group, so 7×30 is $7 \times 3 = 21$, then 210.

What if the basic fact ends in zero, like 5×60 ?

$5 \times 6 = 30$ is the basic fact, which has a zero already. 30 tens is 300, so the product has two zeros. Think of it as 30 tens.

How can you check a product like $4 \times 70 = 280$?

Skip count by 70 four times: 70, 140, 210, 280. You can also estimate, because 4×70 is close to $4 \times 100 = 400$ and a little less.