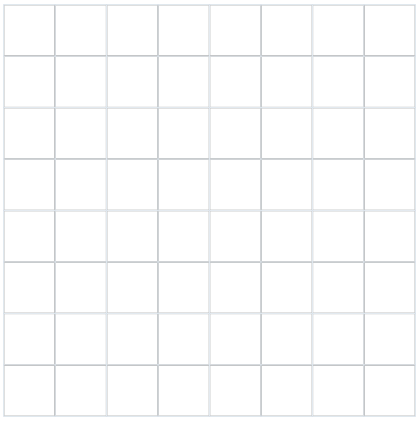
Year 5 - Cube Numbers — Lesson Guide

Step 1

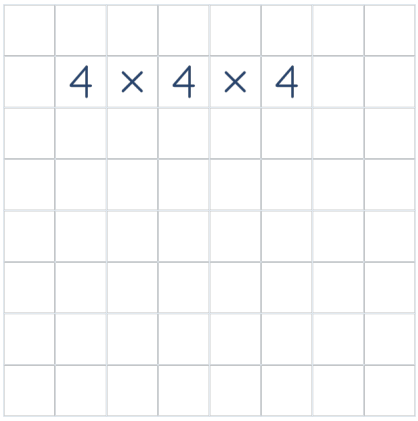
$4^3 =$ ☐



First, we circle the small 3 to show that 4 is cubed.

Step 2

$4^3 =$ ☐

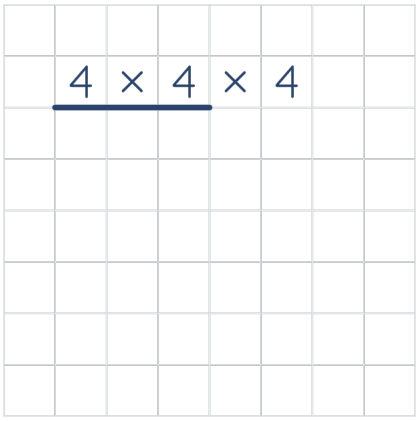


Remember: Multiply three copies of the number together.

The small 3 tells us to multiply 3 copies of 4 together. We write 4 × 4 × 4 below the question.

Step 3

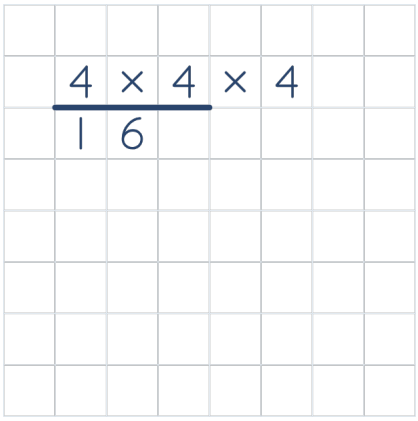
$4^3 =$ ☐



Underline the first two 4s. Multiply this pair first. Use the third 4 to multiply the result.

Step 4

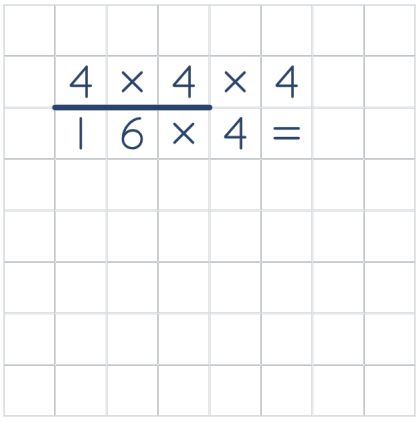
$4^3 =$ ☐



First, we multiply 4 by 4. 4 × 4 = 16. We write 16 underneath the first two factors.

Step 5

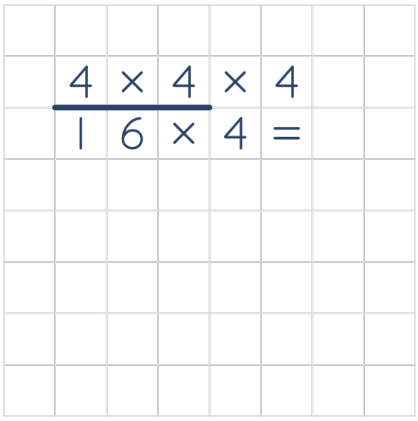
$4^3 =$ ☐



Next, we bring down the last factor, 4. We still need to multiply 16 by 4.

Step 6

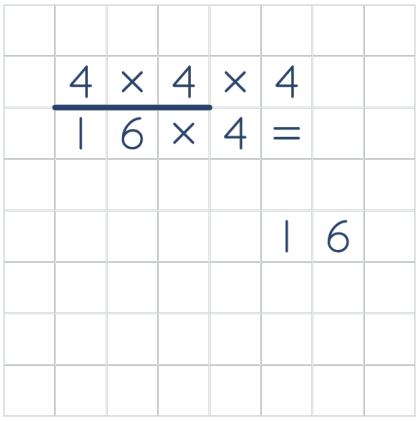
$4^3 =$ ☐



We can work out 16 × 4 mentally if we know the fact. If a written method would help, we can use column multiplication. Let’s follow that method now.

Step 7

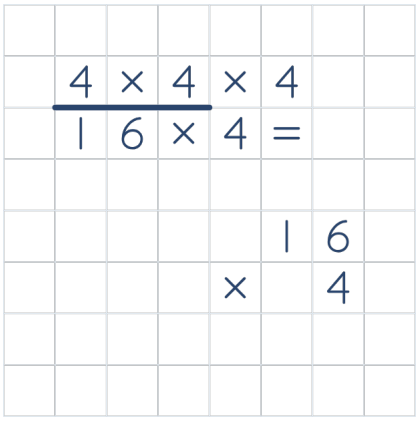
$4^3 =$ ☐



The first digit of 16, 1, is in the tens column, so we start there. Now, we write 16 in the correct columns, with one digit in each box.

Step 8

$4^3 =$ ☐

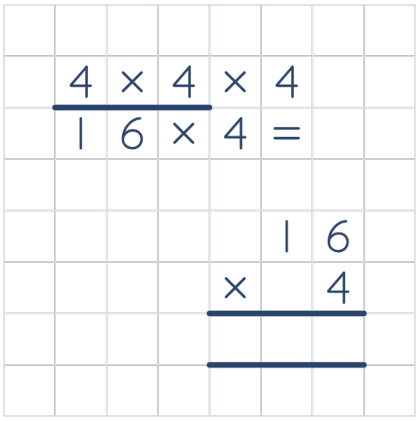


Remember: There must always be a digit in the ones column, even if it is a 0.

Then, we write the multiplication sign on the left and 4 in the ones column. We are multiplying by 4 ones.

Step 9

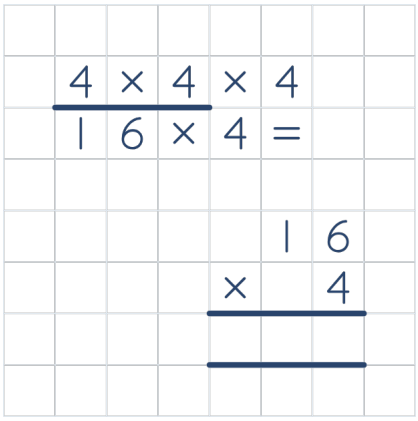
$4^3 =$ ☐



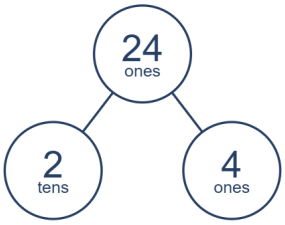
Draw a line under 4. Leave one row for the product, then draw the second line below that row. Write exchanges below the second line.

Step 10

$4^3 =$ ☐

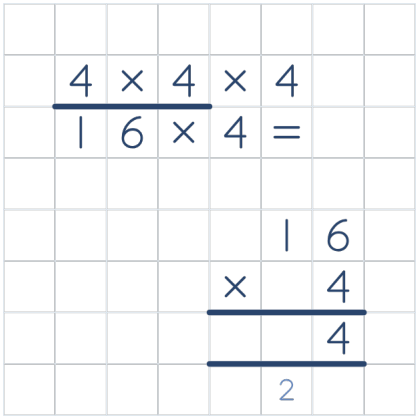


First, we multiply the ones, the smallest place-value column. 6 ones × 4 = 24 ones. As we can only write one digit per box, we partition 24 ones into 2 tens and 4 ones.



Step 11

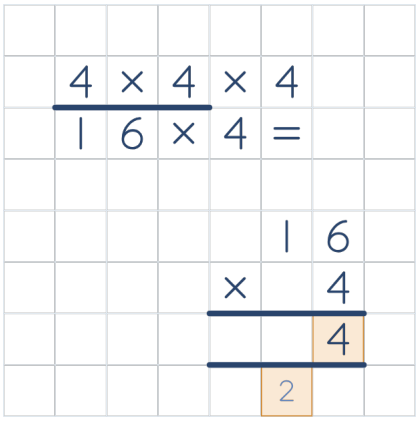
$4^3 =$ ☐



We write the 2 tens in the tens column underneath the answer, ready for the next step. Then we write the remaining 4 ones in the ones answer box.

Step 12

4^3 =

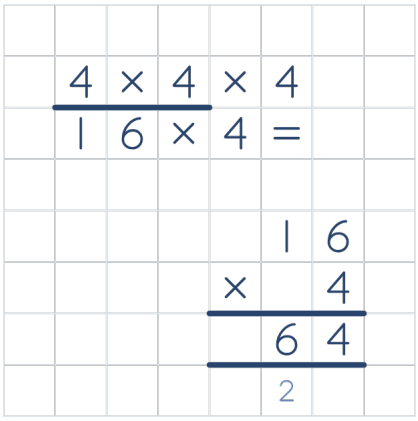


Remember: Check both places. Keep the small 2 below the tens column and the 4 in the ones answer square.

The small 2 below the tens column stands for 2 tens. The 4 in the ones answer square stands for 4 ones. Together, they make 24 ones.

Step 13

4^3 =

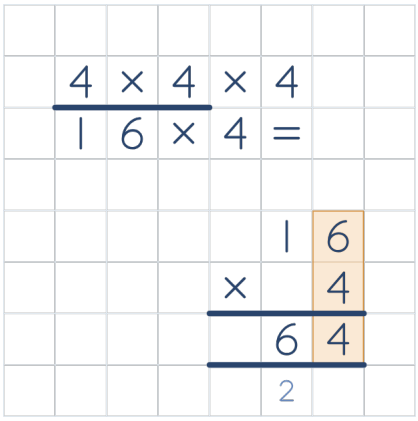


Remember: Look below the column you are working on. Add the exchanged amount written there.

Finally, we multiply the tens. 1 ten × 4 = 4 tens. Add the 2 exchanged tens shown by the small 2 below the tens column. 4 tens + 2 exchanged tens = 6 tens. We write 6 in the tens column. No exchange is needed this time.

Step 14

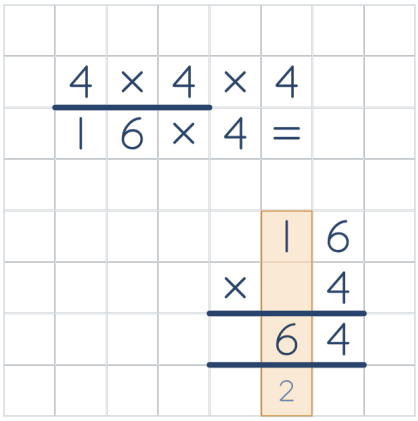
4^3 =



Our product is 64. Before we copy our answer into the answer box, let's check each column, including the exchanges. First, we check the ones: 6 ones × 4 = 24 ones. We have correctly written 2 tens underneath and 4 ones in the answer row.

Step 15

4^3 = ☐

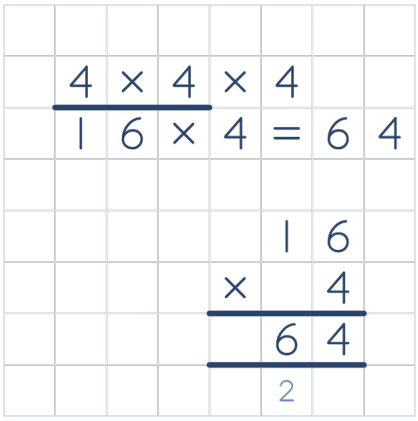


Remember: Look below the column you are working on. Add the exchanged amount written there.

Finally, we check the tens: 1 ten × 4 = 4 tens. Add the 2 exchanged tens shown by the small 2 below the tens column. 4 tens + 2 exchanged tens = 6 tens. We have correctly written 6 in the answer row, using the correct place-value columns.

Step 16

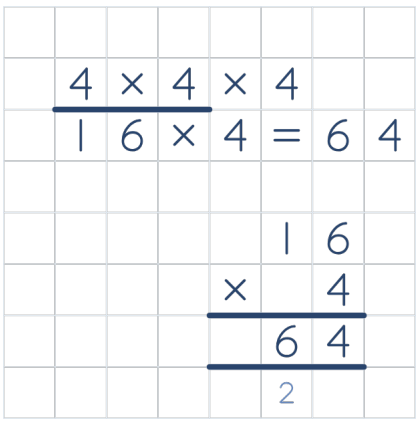
4^3 = ☐



Now, we complete the calculation. 16 × 4 = 64.

Step 17

4^3 = **64**



The product is 64. Copy 64 into the answer box. Make sure you copy the answer correctly.