Mastering Multiplication & Division by 6

Learning multiplication and division by 6 builds strong math skills. It helps us understand numbers better. This is key for harder math later on.

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Why Learn 6s? Real-World Connections

🕐 **Counting Time**

A minute has 60 seconds. That is 6 groups of 10. We use 6s every day.

⬡ **Shapes and Sides**

A hexagon has 6 sides. Knowing 6s helps with shapes. It is useful in design.

◯ **Grouping Items**

Half a dozen means 6 items. This helps with cooking or shopping. It builds on 2s and 3s.

Understanding the 6s multiplication table is useful. It helps with everyday tasks. It builds on skills you already know.

Multiplication by 6: The Concept

Multiplication by 6 means combining 6 equal groups. Think of it as repeated addition. For example, 4 groups of 6 is 24.

We write this as 4 x 6 = 24. You can see this with arrays. Or, you can add 6 four times: 6 + 6 + 6 + 6 = 24.
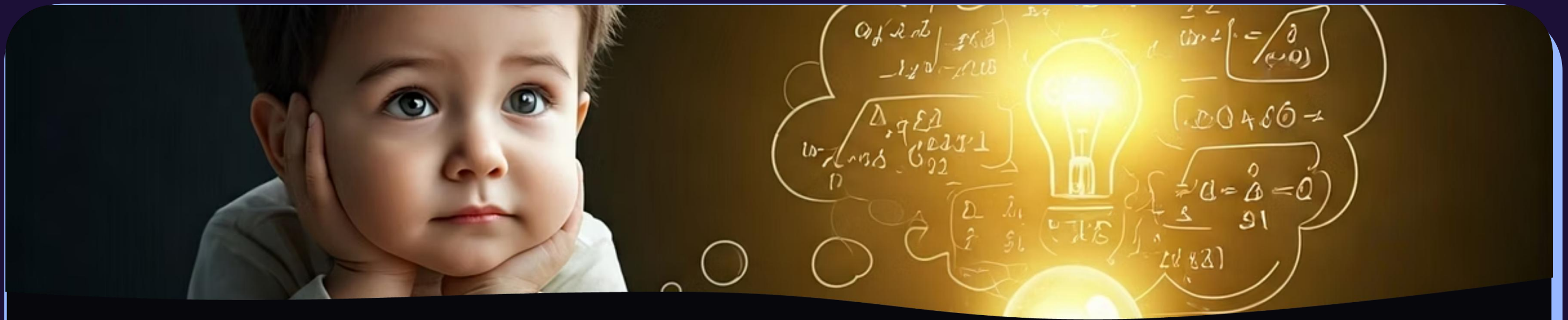
Strategy 1: Doubling the 3s

Start with 3s

If you know "N x 3", you are halfway there. This is your first step.

Double the Result

Take that answer and double it. This gives you "N x 6." It is a quick trick.

For example, if 7 x 3 = 21, then 7 x 6 = 21 + 21 = 42. This strategy works for any number.

Strategy 2: Multiply by 5, Then Add One More

Break down the number 6 into (5 + 1). First, multiply your number by 5. Then, add the original number one more time.

For example, to solve 8 x 6: (8 x 5) + (8 x 1). This is 40 + 8, which equals 48. This is great for numbers easy to multiply by 5.

Practice: Multiplication by 6

6 x 3	18 (Double 9)
9 x 6	54 (9x5 + 9)
6 x 7	42 (Double 21)
Word Problem	6 cars, 4 tires each. How many tires total? 24 tires

Division by 6: The Concept

Division by 6 means splitting a total into 6 equal groups. Or, finding how many groups of 6 are in a total. It's the opposite of multiplication.

If 4 x 6 = 24, then 24 ÷ 6 = 4. They are inverse operations. Understanding one helps with the other.

Strategy 1: Think Multiplication

The Question

To solve 48 ÷ 6, ask yourself, "What number times 6 equals 48?"

Use Your Facts

Use your known multiplication facts. For example, you know that 8 x 6 = 48.

Find the Answer

So, 48 ÷ 6 = 8. This strategy helps you connect multiplication and division.

Strategy 2: Halve, then Divide by 3

This strategy breaks division by 6 into two simpler steps. First, divide the number by 2. This gives you half the original amount.

Then, take that new result and divide it by 3. For example, $54 \div 6 = (54 \div 2) \div 3 = 27 \div 3 = 9$. This uses smaller divisors you know.
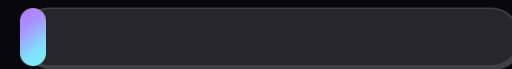
Practice & Conclusion

It's time to practice! Use the strategies learned to solve these problems.

7	5	42	54
42 ÷ 6 = ?	30 ÷ 6 = ?	7 x 6 = ?	6 x 9 = ?
Think multiplication.	Halve, then divide by 3.	Double 7 x 3.	Challenge yourself!

Mastering these facts builds a strong math foundation. Keep practicing for quick recall.

Challenging Practice Questions

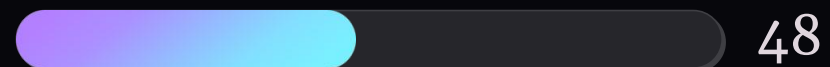Put your skills to the test with these advanced multiplication and division questions:

9

54
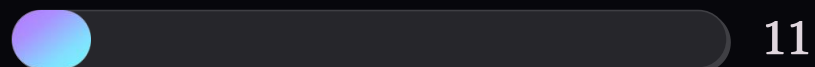
6

$54 \div 6 = ?$

$9 \times 6 = ?$

$36 \div 6 = ?$

48

11

90

$8 \times 6 = ?$

$66 \div 6 = ?$

$15 \times 6 = ?$

Keep up the great work! Practice makes perfect.

Practice & Conclusion

Practice these problems: 36 ÷ 6 = ? (Think: What times 6 is 36?). And 42 ÷ 6 = ? (Think: Halve 42, then divide by 3).

Word Problem: You have 30 cookies. You put 6 in each bag. How many bags do you need? Keep practicing to build speed and confidence! You've got this!

Summary

Dividing by 6 can be simplified by either thinking in terms of multiplication or breaking the division into two easier steps: halving and dividing by 3. With practice, these strategies will help you solve division problems more quickly and accurately. Remember, understanding the relationship between division and multiplication will make these problems much more intuitive. Keep practicing, and soon dividing by 6 will become second nature!

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