

Multiplication and Division: Step-by-Step Checklist for Mastery

Use this list as a guide to walk your child through multiplication and division concepts in order of progression—from simple understanding to more complex operations. At each stage, check for mastery before moving on.

1. Understand What Multiplication Means

- Introduce multiplication as repeated addition (e.g., 3 groups of 4 = $4 + 4 + 4$)
- Use objects: 3 plates with 4 cookies each $\rightarrow 3 \times 4 = 12$
- Try this example: “If we have 5 kids and each one gets 2 apples, how many apples total?”

2. Learn the Vocabulary

- Multiplicand (the number being multiplied): in 4×3 , the 4
- Multiplier (how many times): in 4×3 , the 3
- Product (the answer): $4 \times 3 = 12$
- Factor (any number in a multiplication equation)

3. Use Visuals to Represent Multiplication

- Draw arrays (e.g., 3 rows of 4 stars)
- Circle groups: draw 4 circles with 2 dots each
- Skip-counting on a number line: hop by 3’s

4. Begin with Easy Multiplication Facts

- Teach 0’s and 1’s as simple patterns
- Count by 2’s using socks or shoes
- Practice 5’s using hands (5 fingers each)
- Use 10’s to count dimes or fingers by tens

5. Learn the Other Basic Facts (Up to 12×12)

- Use flash cards, timed drills, or chant facts aloud
- Try: “What’s 6×7 ?” \rightarrow Then show 6 rows of 7 objects or skip-count by 6
- Use online quizzes, oral drills, or memory songs

6. Teach the Properties of Multiplication

- Commutative: $3 \times 4 = 4 \times 3$
- Associative: $(2 \times 3) \times 4 = 2 \times (3 \times 4)$
- Distributive: $6 \times 7 = (6 \times 5) + (6 \times 2)$

7. Practice with Word Problems and Story Math

- “If a car has 4 tires, how many tires do 3 cars have?”
- Include missing factor questions: “What times 5 equals 20?”

8. Use the Multiplication Table or Chart

- Fill in missing parts as a game
- Notice patterns: diagonal squares (5x5, 6x6...)

9. Move into Written Multiplication Problems

- Start with 4×13 (single digit x two digit)
- Practice without carrying first

10. Learn and Practice the Long Multiplication Algorithm

- Example: 23×4
 $4 \times 3 = 12$ (write 2, carry 1)
 $4 \times 2 = 8$, plus 1 = 9 → Answer is 92

Transition to Division

11. Understand What Division Means

- Use snacks: “12 cookies, 4 kids—how many each?”
- Group 12 objects into groups of 3 → See there are 4 groups

12. Learn the Vocabulary

- Dividend (total): 24
- Divisor (groups): 6
- Quotient (answer): 4 in $24 \div 6 = 4$

13. Start with Easy Division Facts

- Use reverse multiplication: “What times 2 equals 10?”

- Skip-count backwards: “How many 5s make 20?”

14. Teach the Division Table Format

- Use multiplication chart in reverse
- Start with known facts, build confidence

15. Move into Written Division Problems

- Start with $32 \div 4 = ?$
- “Does 4 go into 3?” No. “Does 4 go into 32?” Yes, 8 times.

16. Teach Long Division with Remainders

- Example: $85 \div 4$
4 into 8 = 2 → write 2, bring down 5
4 into 5 = 1, remainder 1 → Answer: 21 R1

17. Practice Division Fact Families

- Start with: $3 \times 4 = 12$
Then practice: $12 \div 4 = 3$ and $12 \div 3 = 4$

18. Word Problems with Division

- “You have 18 pencils and 3 containers. How many in each?”
- “You need to split 20 chores between 4 people. How many each?”

19. Learn Division Shortcuts (as readiness allows)

- Divide by 10s using patterns: $90 \div 10 = 9$
- Round and estimate: “About how many times does 6 go into 40?”

20. Master Both Operations with Real-Life Application

- Split a pizza into 8 slices and divide between guests
- Use recipes to double or halve ingredients
- Divide up a grocery bill or share change evenly

Go at your child’s pace. Once they’re confident in the basics, encourage them to apply their knowledge in daily life. This is how math becomes a lifelong skill, not just a school subject.