Class 4 Factors and Multiples Worksheet

Thinking Juggernaut

Name: _____ Date: _____ Total Marks: 24

🎯 Understanding Factors and Multiples

What are Factors?

Factors are numbers that divide another number exactly without leaving any remainder.

Example: Factors of 12 are: 1, 2, 3, 4, 6, 12

Because: 12 ÷ 1 = 12, 12 ÷ 2 = 6, 12 ÷ 3 = 4, 12 ÷ 4 = 3, 12 ÷ 6 = 2, 12 ÷ 12 = 1

What are Multiples?

Multiples are numbers we get when we multiply a number by 1, 2, 3, 4, and so on.

Example: Multiples of 5 are: 5, 10, 15, 20, 25, 30...

Because: 5×1 = 5, 5×2 = 10, 5×3 = 15, 5×4 = 20, 5×5 = 25...

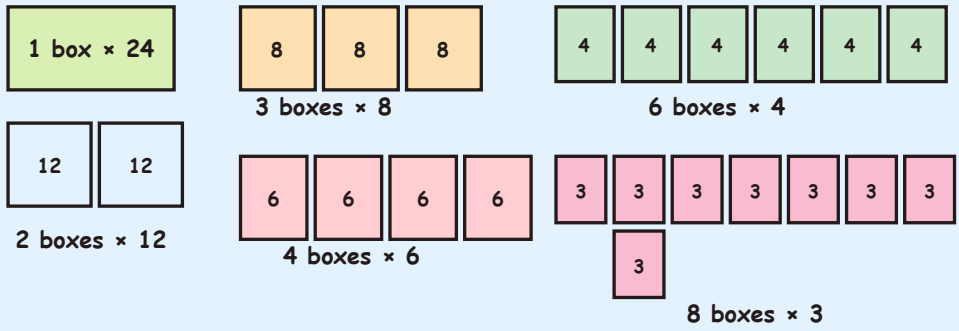
🔑 Key Differences:

- **Factors** are smaller or equal to the number
- **Multiples** are larger or equal to the number
- **Factors** are LIMITED (finite)
- **Multiples** are UNLIMITED (infinite)

📝 Sample Problem

Problem: Priya has 24 chocolates. She wants to pack them equally into boxes. In how many different ways can she pack them? (Each box should have the same number of chocolates)

24 Chocolates - Different Packing Options



Solution:

We need to find all the factors of 24 (numbers that divide 24 exactly)

Let's check:

- 24 ÷ 1 = 24 ✓ (1 box of 24 chocolates)
- 24 ÷ 2 = 12 ✓ (2 boxes of 12 chocolates)
- 24 ÷ 3 = 8 ✓ (3 boxes of 8 chocolates)
- 24 ÷ 4 = 6 ✓ (4 boxes of 6 chocolates)
- 24 ÷ 6 = 4 ✓ (6 boxes of 4 chocolates)
- 24 ÷ 8 = 3 ✓ (8 boxes of 3 chocolates)
- 24 ÷ 12 = 2 ✓ (12 boxes of 2 chocolates)
- 24 ÷ 24 = 1 ✓ (24 boxes of 1 chocolate)

Answer: Factors of 24 are: 1, 2, 3, 4, 6, 8, 12, 24

She can pack them in 8 different ways! 🍫

Part A: Warm-up Questions

⭐ Easy Level

1. Write all factors of 6.

Factors of 6: _____

2. Write the first 5 multiples of 3.

Multiples of 3: _____, _____, _____, _____, _____

3. True or False: 4 is a factor of 12.

○ True ○ False

4. Is 20 a multiple of 5?

Answer: _____

5. Fill in the blank: All numbers have _____ and itself as factors.

Answer: _____

6. Circle the factors of 10 from the numbers below:

1 2 3 5 10

Circle the correct numbers above

7. Match the numbers with their factors:

Column A (Number)	Column B (Factors)
a) 8	i) 1, 3, 9
b) 9	ii) 1, 2, 3, 6
c) 6	iii) 1, 2, 4, 8

Write your answers: a-____, b-____, c-____

8. Which of these is a multiple of 4?

a) 14 b) 16 c) 18 d) 19

Answer: _____

Part B: Practice Questions

☆☆ Medium Level

9. Write all factors of 15.

Hint: Which numbers divide 15 exactly?

15 ÷ 1 = ? 15 ÷ 5 = ?

15 ÷ 3 = ? 15 ÷ 15 = ?

Factors: _____

10. Which is the smallest multiple of any number?

Answer: _____

11. Raj has 18 pencils. He wants to arrange them equally in rows. How many different ways can he arrange them?

Factors of 18: _____
Number of ways: _____

12. Fill in the missing multiples of 7:

7, 14, _____, 28, _____, 42, _____

13. True or False: Every number is a multiple of itself.

○ True ○ False

14. A teacher has 20 students. She wants to divide them into equal groups. List all the possible group sizes.

20 Students

Find all factors of 20

Possible group sizes: _____

15. Which numbers between 10 and 20 are multiples of both 2 and 3?

Answer: _____

16. Write the factors of 12 in ascending order.

Factors: _____

17. A number has only two factors: 1 and itself. What is such a number called?

Answer: _____

18. Circle the common multiples of 2 and 5 from the numbers below:

5	10	12	15	20	25

Circle the correct numbers above

Part C: Challenge Questions

☆☆☆ Hard Level

19. A shopkeeper has 36 apples. He wants to pack them in boxes with equal numbers in each box. How many different packing options does he have? (List all factors)

36 Apples 🍎

Find all factors of 36

Think: What numbers divide 36 exactly?

All factors of 36: _____
Total packing options: _____

20. Find the smallest number that is a multiple of both 4 and 6.

Multiples of 4: 4, 8, 12, 16, 20, 24...
Multiples of 6: 6, 12, 18, 24, 30...
Common smallest multiple: _____

21. A number between 20 and 30 has exactly 4 factors. What is the number?

Hint: Check each number's factors
Answer: _____

22. Meera is thinking of a number. It is a multiple of 5 and a factor of 30. What could the number be? (List all possibilities)

Multiple of 5	Factor of 30
5, 10, 15, 20, 25, 30...	1, 2, 3, 5, 6, 10, 15, 30

Answer: _____

23. A farmer has 48 eggs. He wants to arrange them in trays where each tray has the same number of eggs (more than 2 but less than 10). How many different ways can he arrange them?

Factors of 48 (between 2 and 10): _____
Number of ways: _____

24. Which two-digit number has the most factors?

Hint: Check numbers like 12, 18, 24, 30, 36, 48, 60, 72, 84, 90, 96...

Number: _____
Total number of factors: _____
List all factors: _____

🔑 Answer Key

Part A: Warm-up Questions

1. 1, 2, 3, 6
2. 3, 6, 9, 12, 15
3. True (12 ÷ 4 = 3, no remainder)

4. Yes (5 × 4 = 20)

5. 1 (Every number has 1 and itself as factors)

6. Circle: 1, 2, 5, 10 (All factors of 10)

7. a-iii, b-i, c-ii

8. b) 16 (4 × 4 = 16)

Part B: Practice Questions

9. 1, 3, 5, 15

10. The number itself (e.g., smallest multiple of 5 is 5)

11. Factors of 18: 1, 2, 3, 6, 9, 18 | Number of ways: 6

12. 21, 35, 49

13. True (e.g., 5 × 1 = 5)

14. 1, 2, 4, 5, 10, 20 (All factors of 20)

15. 12, 18 (Multiples of 6 are multiples of both 2 and 3)

16. 1, 2, 3, 4, 6, 12

17. Prime number

18. Circle: 10, 20 (Numbers divisible by both 2 and 5)

Part C: Challenge Questions

19. All factors: 1, 2, 3, 4, 6, 9, 12, 18, 36 | Total: 9 packing options

20. 12 (LCM of 4 and 6)

21. 25 (Factors: 1, 5, 25) or 27 (Factors: 1, 3, 9, 27) - Accept either answer

22. 5, 10, 15, 30 (Must be in both lists)

23. Factors between 2 and 10: 3, 4, 6, 8 | Number of ways: 4

24. 96 has 12 factors (1, 2, 3, 4, 6, 8, 12, 16, 24, 32, 48, 96) - Most among common two-digit numbers. Other acceptable answers: 72, 84, 90 (all have many factors)

📊 Scoring Guide & Next Steps

Total Questions: 24 | Total Marks: 24

Score Range	Performance Level	What to Practice Next
20-24	⭐⭐⭐ Excellent!	**You're ready for:** • Prime and Composite numbers • Finding HCF (Highest Common Factor) and LCM (Lowest Common Multiple) • Factor trees and prime factorization • Class 5 advanced number theory concepts
15-19	⭐⭐ Very Good!	**Focus on:** • Practice finding factors of larger numbers (30, 40, 50) • Work on identifying common multiples of two numbers • Practice more word problems involving factors and multiples • Create factor pairs (e.g., for 24: 1×24, 2×12, 3×8, 4×6)
10-14	⭐ Good Effort!	**Practice these skills:** • Make a factor chart for numbers 1-20 on paper • Write multiplication tables 1-10 to understand multiples better • Practice division facts to identify factors quickly • Use objects: group 12 stones in different ways (1×12, 2×6, 3×4) • Do 5 factor-finding exercises daily for 2 weeks
0-9	Keep Trying!	**Start with basics:** • Master multiplication tables 1-10 first • Understand division: 12 ÷ 3 = 4 means 3 is a factor of 12 • Start with small numbers (6, 8, 10) to find factors • Use real objects to group and understand factors visually

		• Practice only multiplication and division for one week • Ask your teacher to explain with concrete examples

📚 Detailed Learning Path by Topic

If you struggled with Questions 1-8 (Basic Factors & Multiples):

- 📝 Write multiplication tables 2-10 daily and recite them
- 🎯 Practice division: For any number, divide by 1, 2, 3, 4... to find factors
- 📊 Make a "Factor Finder Chart" for numbers 6, 8, 10, 12, 15, 18, 20
- 🔢 Remember: Factor × Factor = Number | Number ÷ Factor = Another Factor
- ✏️ Daily exercise: Pick 3 numbers and list all their factors

If you struggled with Questions 9-18 (Understanding & Application):

- 🎲 Practice finding factors systematically: Start from 1, go up to the number
- 📐 Use factor pairs: For 20 → (1,20), (2,10), (4,5)
- 🔍 Find common multiples by listing: Multiples of 3 (3,6,9,12...) and 4 (4,8,12...)
- 📚 Solve 5 word problems daily using real-life examples
- 🎯 Key trick: To check if A is a factor of B, see if B ÷ A gives no remainder

If you struggled with Questions 19-24 (Advanced Concepts):

- 🧱 Practice finding ALL factors of larger numbers (24, 30, 36, 48)
- 📊 Make a comparison chart: List multiples of two numbers side by side
- 🔢 Learn to find LCM: List multiples until you find the smallest common one
- 🎯 Practice factor counting: How many factors does 12 have? (1,2,3,4,6,12 = 6 factors)
- 📝 Challenge yourself: Find numbers with exactly 3, 4, or 5 factors

✨ **Great Job Completing This Worksheet!** ✨

Practice multiplication tables daily - they're the key to mastering factors and multiples!

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