Name & Surname: _____ Class: _____ Date: _____

Factor Pairs and Multiples

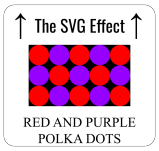
Find all pairs, spot multiples, and sort prime and composite

About 45 minutes Level ★★★☆☆

What to Remember

Factors fit inside a number. Multiples grow out from it.

- To find **factor pairs**, try 1, 2, 3 in order. When one divides exactly, write the pair. Stop when the pairs meet. Example: 12 = 1 × 12, 2 × 6, 3 × 4.
- A number is a **multiple** of each of its factors. Example: 12 = 3 × 4, so 12 is a multiple of 3 and of 4.
- **Prime** has exactly 2 factors, 1 and itself. **Composite** has more than 2 factors. 1 is neither prime nor composite.



Task A

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Warm up with place value. Write each digit in its column.

Number	Tens	Ones
24		
36		
48		

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Practice Makes Perfect

Find factors, list multiples, and check divisibility.

Key words

factor: a number that divides another number exactly

factor pair: two numbers that multiply to give a number

composite: has more than two factors

multiple: the result of multiplying a number by 1, 2, 3 and so on

prime: has exactly two factors: 1 and itself

Task B

/10

Practice **factor pairs** and **multiples** step by step.

WARM UP

1 List the **factors** of 18 in order from smallest to largest.

Answer: _____

2 Write the first five **multiples** of 3.

Answer: _____

3 Is 35 a **multiple** of 7? Explain with a multiplication.

Answer: _____

PRACTICE

4 Find all **factor pairs** of 28.

Answer: _____

5 Find all **factor pairs** of 36.

Answer: _____

6 Work out 48 ÷ 6. Is 48 a **multiple** of 6?

Answer: _____

7 Work out 7 × 6. Is 42 a **multiple** of 7?

Answer: _____

PROBLEM SOLVING

8 A class has 30 paper stars to pack in equal bags with none left over. List all the **bag sizes** that work.

Answer: _____

9 Is 51 **prime** or **composite**? Show how you know.

Answer: _____

10 If 4 is a **factor** of 32, show with a multiplication that 32 is a **multiple** of 4.

Answer: _____

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Spot the Mistake

Find the wrong step and explain the fix.

Task C

/4

Find the wrong step and fix the mistake.



Student A

Find all factor pairs of 48.

1. 2 × 24, 3 × 16, 4 × 12, 6 × 8
2. 1 does not count as a factor, so stop here
3. So the pairs are 2 × 24, 3 × 16, 4 × 12, 6 × 8

The mistake is in step: _____

What went wrong?

.....

Correct answer: _____



Student B

Is 15 prime or composite?

1. 15 = 1 × 15
2. 3 × 5 = 15 also works, but that does not make new factors
3. So 15 is prime

The mistake is in step: _____

What went wrong?

.....

Correct answer: _____

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Prime Time Challenge

Try new numbers with factors, multiples, and primes.

Task D

/10

Solve with factor pairs, multiples, and prime checks.

WARM UP

1 List the **factors** of 20 in order.

Answer: _____

2 Write the first four **multiples** of 8.

Answer: _____

3 Work out 63 ÷ 9. Is 63 a **multiple** of 9?

Answer: _____

PRACTICE

4 Find all **factor pairs** of 40.

Answer: _____

5 Find all **factor pairs** of 49.

Answer: _____

6 Is 81 a **multiple** of 9? Show with a multiplication.

Answer: _____

7 Is 97 **prime** or **composite**? Explain.

Answer: _____

PROBLEM SOLVING

8 A shop has 100 color stickers to pack in equal bags with none left over. List all the **bag sizes** that work.

Answer: _____

9 Is 91 **prime** or **composite**? Show how you know.

Answer: _____

10 6 and 5 are **factors** of 30. Use a multiplication to explain why 30 is a **multiple** of both.

Answer: _____

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Multiply, Divide, Match

Calculate to test multiples, then match vocabulary.

Task E

/4

Test **multiples** with division and build them with multiplication.

1. 6) 4 8

2. 8) 7 2

3. 1 4 × 7

4. 2 5 × 4

Task F

Example done for you

/4

Match each **math word** to its meaning.

1. factor
2. multiple
3. factor pair
4. prime
5. composite

- ◯ has exactly two factors: 1 and itself
- ◯ two numbers that multiply to give a number
- ◯ result of multiplying a number by 1, 2, 3 and so on
- (1) divides a number exactly with no remainder
- ◯ has more than two factors

How did I do?

Circle a face for each line.

I can find all factor pairs for numbers to 100. ☹ 😐 ☺

I can tell if a number is a multiple of a one-digit number. ☹ 😐 ☺

I can tell if a number is prime or composite. ☹ 😐 ☺

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Answer sheet: Factor Pairs and Multiples

Task A

1. 24: 2 | 4
2. 36: 3 | 6
3. 48: 4 | 8

Task B

1. 1, 2, 3, 6, 9, 18
2. 3, 6, 9, 12, 15
3. Yes, $7 \times 5 = 35$
4. 1×28, 2×14, 4×7
5. 1×36, 2×18, 3×12, 4×9, 6×6
6. 8, Yes
7. 42, Yes
8. 1, 2, 3, 5, 6, 10, 15, 30
9. Composite, $3 \times 17 = 51$
10. $4 \times 8 = 32$

Task C

1. Step 2 is wrong: 1 and the number itself are always factors. Student A left out 1×48. Correct answer: 1×48, 2×24, 3×16, 4×12, 6×8
2. Step 2 is wrong: 3 and 5 are also factors, so 15 has 4 factors and is composite. Correct answer: Composite, factors are 1, 3, 5, 15

Task D

1. 1, 2, 4, 5, 10, 20
2. 8, 16, 24, 32
3. 7, Yes
4. 1×40, 2×20, 4×10, 5×8
5. 1×49, 7×7
6. Yes, $9 \times 9 = 81$
7. Prime, only factors are 1 and 97
8. 1, 2, 4, 5, 10, 20, 25, 50, 100
9. Composite, $7 \times 13 = 91$
10. $5 \times 6 = 30$

Task E

1. $48 \div 6 = 8$
2. $72 \div 8 = 9$
3. $14 \times 7 = 98$
4. $25 \times 4 = 100$

Task F

1. factor → divides a number exactly with no remainder
2. multiple → result of multiplying a number by 1, 2, 3 and so on
3. factor pair → two numbers that multiply to give a number
4. prime → has exactly two factors: 1 and itself
5. composite → has more than two factors

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