Prime Warm-up Sheet FREE

Grades 5-8 · 20 minutes · primes, composites, and factorization routines

How to use: run as a warm-up, then review answers together

More: find premium packs on NumberWonders.com/products

A) Prime or composite?

1. 29
2. 51
3. 97
4. 121
5. 169

B) Write the prime factorization

6. 84
7. 105
8. 128
9. 221
10. 1001

C) Quick divisibility checks

Circle all divisors that apply.

11. 90 is divisible by: 2, 3, 4, 5, 9, 10
12. 246 is divisible by: 2, 3, 6, 9, 11
13. 1008 is divisible by: 7, 8, 9, 12

D) Mini challenge

14. Find two different composites that multiply to 360.
15. Write a number between 200 and 300 with exactly 6 positive divisors.
16. Explain why 1 is neither prime nor composite.
17. Is 2 the only even prime? Explain.
18. Write a prime number that ends with 9.
19. Write a composite number that is a perfect square.
20. Bonus: find a pair of twin primes under 100.

Teacher tip: after students finish B), ask them to justify using factor pairs why their result is complete.

Answer key (sample solutions)

A) Prime or composite

1. **prime**
2. **composite** (3 × 17)
3. **prime**
4. **composite** (11 × 11)
5. **composite** (13 × 13)

B) Prime factorization

6. 84 = $2^2 \times 3 \times 7$
7. 105 = $3 \times 5 \times 7$
8. 128 = 2^7
9. 221 = 13×17
10. 1001 = $7 \times 11 \times 13$

C) Divisibility

11. **2, 3, 5, 9, 10** (not 4)
12. **2, 3, 6** (not 9, 11)
13. **7, 8, 9, 12**

D) Mini challenge

14. Example: 24×15
15. Example: $224 = 2^5 \times 7$ has 6 divisors
16. **Prime** needs exactly 2 divisors; **1** has 1 divisor.
17. **Yes.** Any even number > 2 is divisible by 2 and itself.
18. Example: **19, 29, 59, 79, 89**
19. Example: **36**
20. Example: **(71, 73)**

Next step: if students enjoyed this, the Prime Detective Activity Kit adds 10 sessions + station cards.