

Notation Detectives Answer Key

- 1) Error: The coefficient is greater than or equal to 10.
Correct notation: 5.2×10^4
- 2) Error: The exponent should be negative for a small decimal.
Correct notation: 8.4×10^{-4}
- 3) Error: The coefficient is less than 1.
Correct notation: 7.3×10^6
- 4) Error: The coefficient is greater than or equal to 10.
Correct notation: 9.6×10^{-3}
- 5) Error: The exponent is too small.
Correct notation: 4.5×10^5
- 6) Error: The exponent is incorrect.
Correct notation: 7.2×10^{-6}
- 7) Error: The exponent is too small.
Correct notation: 9.1×10^7
- 8) Error: The coefficient is greater than or equal to 10.
Correct notation: 5.3×10^{-7}

Teacher's Guide

- Quick implementation tips
 - o Review the two key rules before starting: the coefficient must be at least 1 and less than 10, and the exponent must correctly reflect the decimal movement.
 - o Encourage students to check the coefficient first, then verify the exponent.
 - o Ask students to convert corrected answers back to standard form to confirm accuracy.
- Differentiation strategies
 - o Allow students to work with a partner to discuss each error before writing an explanation.
 - o Challenge advanced students to identify whether the mistake is in the coefficient, exponent, or both before correcting it.
- Engagement ideas
 - o Have students act as "math detectives" and assign a different type of mistake to each problem.
 - o Let pairs compare explanations and vote on the clearest mathematical reasoning.