LESSON MAKER PRO

Decimal Point Dash

Switch between standard and scientific notation.

GRADE 8 · TEKS 8.2.C

8.2.C "convert between standard decimal notation and scientific notation; and"

NAME _____ DATE _____

MOVE THE DECIMAL

In scientific notation, the first factor is at least 1 and less than 10, and it is multiplied by a power of 10. To change standard notation to scientific notation, move the decimal left for a positive exponent or right for a negative exponent. To change scientific notation to standard notation, reverse those directions, and move the decimal the number of places shown by the exponent's absolute value.

WORKED EXAMPLE

Write 58,400,000 in scientific notation.

1. Place the decimal after the first nonzero digit: 5.84
2. The decimal moved 7 places to the left.
3. Use a positive exponent of 7: 5.84×10^{7}

Answer: 5.84×10^{7}

PRACTICE 6 problems

1 Write 0.000672 in scientific notation.

ANSWER _____

2 Write 4.09×10^{5} in standard decimal notation.

ANSWER _____

3 Write 73,600 in scientific notation.

ANSWER _____

4 Write 8.15×10^{-3} in standard decimal notation.

ANSWER _____

5 Write 0.00000093 in scientific notation.

ANSWER _____

6 Write 1.27×10^{6} in standard decimal notation.

ANSWER _____

APPLY IT Show your work

1 An online game update uses 0.0000048 terabytes of storage. Write this amount in scientific notation.

WORK SPACE

ANSWER _____

2 A music venue sold 3.6×10^4 tickets during a concert series. Write the number of tickets in standard decimal notation.

WORK SPACE

ANSWER _____

CHALLENGE One step up

A sensor measures 7.02×10^{-8} meters. Write the measurement in standard decimal notation and explain how the exponent tells you where to move the decimal.

WORK SPACE AND ANSWER

ANSWER KEY

Decimal Point Dash

GRADE 8 · TEKS 8.2.C

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Write 0.000672 in scientific notation.	**6.72×10^{-4}**
2	Write 4.09×10^{5} in standard decimal notation.	**409,000**
3	Write 73,600 in scientific notation.	**7.36×10^{4}**
4	Write 8.15×10^{-3} in standard decimal notation.	**0.00815**
5	Write 0.00000093 in scientific notation.	**9.3×10^{-7}**
6	Write 1.27×10^{6} in standard decimal notation.	**1,270,000**

PART 2 · APPLY IT

1. **4.8×10^{-6} terabytes** Move the decimal 6 places to the right to make 4.8. Because the original number is less than 1, use a negative exponent.
2. **36,000 tickets** The exponent is positive 4, so move the decimal in 3.6 four places to the right. This gives 36,000.

CHALLENGE

0.0000000702 meters. The exponent is -8, so move the decimal 8 places to the left and add zeros as needed.

Accept equivalent decimal forms with or without commas. Scientific notation answers should have a first factor that is at least 1 and less than 10.