

# Multiplying & Dividing in Scientific Notation: Space Distances

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Name: \_\_\_\_\_ Date: \_\_\_\_\_

## LEARNING OBJECTIVE

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Students will multiply and divide numbers written in scientific notation, applying exponent rules.

## MATERIALS NEEDED

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- calculator
- ruler
- graph paper
- internet-connected device (optional, for planet distance data)

## HANDS-ON ACTIVITY

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1. Look up or use provided approximate distances from the sun in scientific notation for 3 planets, such as Earth at about  $1.5 \times 10^8$  km, Mars at about  $2.28 \times 10^8$  km, and Jupiter at about  $7.78 \times 10^8$  km.
2. By hand, calculate how many times farther Jupiter is from the sun than Earth by dividing the two scientific notation values, showing all work on graph paper.
3. Calculate the total distance if a spacecraft traveled from the sun to Earth and back 10 times, converting your final answer back into proper scientific notation.
4. Create one original multiplication problem combining two scientific notation numbers of your choice and solve it.
5. Verify one of your answers using a calculator.

## QUESTIONS

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1.  $(3 \times 10^4)$  times  $(2 \times 10^3)$  equals what?
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2.  $(8 \times 10^6)$  divided by  $(2 \times 10^2)$  equals what?
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3. How many times farther from the sun is Jupiter than Earth, using the distances given?
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4. What is the total round-trip distance for 10 round trips between the sun and Earth, in proper scientific notation?
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