GENERAL
MATH-RELATED
SCIENCE SKILLS

Scientific Notation

> **Goal** • Practise writing very small and very large numbers using scientific notation.

Background

Extremely large or small numbers are awkward to record in full. Scientists find it easier to report such numbers in a standard form referred to as scientific notation.

For scientific notation, one digit (other than 0) is placed before the decimal point. The other significant digits are placed after the decimal point.

What to Do

• Read page 576 in *SCIENCEPOWER™ 9*.

• Use the information from there to help you answer the questions below.

Questions

1. Using scientific notation, you can show the distance between Mercury and the Sun as 5.8×10^7 km rather than as 58 000 000 km. Explain what 10^7 means.

   _____

   _____

2. Describe the effect on the exponent of moving a decimal the following directions:

   (a) to the left _____

   (b) to the right _____

3. Rewrite the following measurements in scientific notation:

   (a) 0.000045 km _____   (b) 456 000 000 g _____

   (c) 90 200 s _____   (d) 0.0076 cm _____

   (e) 290 000 N _____   (f) 0.00457 W _____

   (g) 0.000042 km _____   (h) 456 L _____

   (i) 20 s _____   (j) 0.0623 W _____

4. Rewrite the following in full.

   (a) 9.6×10^4 m _____   (b) 0.56×10^{-4} cm _____

   (c) 3.4×10^{-3} m _____   (d) 1.6×10^2 m _____

   (e) 4.56×10^{-1} cm _____   (f) 3×10^0 m _____