DATE: NAME: CLASS:

GENERAL SCIENCE TOOLKIT

Precision and Accuracy

BLM G-9

Goal • Learn about precision and accuracy in science

Think About It

No measuring device can give an absolutely exact measure. So how do scientists describe how close an instrument comes to measuring the true result?

Precision

Quantitative data from any measuring device are uncertain. You can describe this uncertainty in terms of precision and accuracy. The term **precision** describes both the exactness of a measuring device and the range of values in a set of measurements.

The precision of a measuring instrument is usually half the smallest division on its scale. For example, a ruler is graduated in centimetres, so it is precise to ± 0.5 cm. A precise measuring device will give nearly the same result every time it is used to measure the same object.

Accuracy

How close a measurement or calculation comes to the true value is described as **accuracy**. To improve accuracy, scientific measurements are often repeated and combined mathematically.

1. How many times do you think you should measure something in science? Explain.

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2. List three examples of situations where precision and accuracy of measure would be very important.

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