

## Making Careful Linear Measurements

To measure with care, students need both mechanical skills and conceptual understandings. Techniques that are important for careful measuring include the following:

- Lining up the measurement tool exactly at zero when beginning a new measurement, and reading the calibrations on the measurement tool correctly;
- Working either in meters and centimeters or feet and inches—but not a mixture of metric and standard systems;
- Carefully iterating with your measurement tool, without gaps or overlaps, when measuring a length longer than the tool;
- Keeping track of partial measurements in order to calculate the total measurement; and
- When measuring to the nearest half inch, determining which half inch is closest.

Important concepts to understand include the following:

- Knowing *why* these measurement techniques are important;
- Recognizing when careful measurement is needed and when an estimate is adequate;
- Using benchmarks to determine if a measurement is reasonable; and
- Double-checking measurements.

As students work on measurement activities, circulate through the class to observe and help students learn the skill of measuring while they are actually doing it. Discuss with students the reasonableness of their measurements, help them explore possible sources of measurement error, and encourage them to check and revise measurements as needed.