# Unit 6 Lesson 9: Measurement Error

## 1 Measuring to the Nearest (Warm up)

**Student Task Statement**

Your teacher will give you two rulers and three line segments labeled A, B, and C.

1. Use the centimeter ruler to measure each line segment to the nearest centimeter. Record these lengths in the first column of the table.

2. Use the millimeter ruler to measure each line segment to the nearest tenth of a centimeter. Record these lengths in the second column of the table.

| line segment | length (cm) as measured with the first ruler | length (cm) as measured with the second ruler |
|:---:|:---:|:---:|
| A | | |
| B | | |
| C | | |

## 2 Measuring a Soccer Field

**Student Task Statement**

A soccer field is 120 yards long. Han measures the length of the field using a 30-foot-long tape measure and gets a measurement of 358 feet, 10 inches.

1. What is the amount of the error?

2. Express the error as a percentage of the actual length of the field.

# 3 Measuring Your Classroom

## Student Task Statement

Your teacher will tell you which three items to measure. Keep using the paper rulers from the earlier activity.

1. Between you and your partner, decide who will use which ruler.

2. Measure the three items assigned by your teacher and record your measurements in the first column of the appropriate table.

   Using the cm ruler:

   | item | measured length (cm) | actual length (cm) | difference | percentage |
   |------|----------------------|--------------------|------------|------------|
   |      |                      |                    |            |            |
   |      |                      |                    |            |            |
   |      |                      |                    |            |            |

   Using the mm ruler:

   | item | measured length (cm) | actual length (cm) | difference | percentage |
   |------|----------------------|--------------------|------------|------------|
   |      |                      |                    |            |            |
   |      |                      |                    |            |            |
   |      |                      |                    |            |            |

3. After you finish measuring the items, share your data with your partner. Next, ask your teacher for the actual lengths.

4. Calculate the difference between your measurements and the actual lengths in both tables.

5. For each difference, what percentage of the actual length is this amount? Record your answers in the last column of the tables.