

Precision → smallest unit of the measuring tool.

Lesson 3: Accuracy — close ness to the correct measure.

Accuracy is different than precision. While precision expresses the smallest unit of the measuring device used, accuracy deals with to the "closeness to the correct measure."

Example 1

Frank is 34 years old. While Frank is actually 34 years, 2 months, 1 week and 4 days old, referring to Frank as being 34 years old is considered accurate enough for the situation.

Example 2

A weight disk used in weightlifting at the Olympic Games has "20 pounds" written on it. George takes an actual measurement of the weight disk and finds its weight to be 20.483 pounds.

Because the weight of the disks determines the winner of a weightlifting competition, they may say that the weight is NOT accurate, even though it is pretty close.

The problem is how do you determine what is "close" and what is "close enough" (or not) for any given situation.

Example 3

The actual temperature is measured to be 22.56°C. Hilda says that the temperature is 20°. She is off by more than 2.5°. She would be **more accurate** if she reported the temperature to be 22° or 23°.

Example 4

Determine if the reported measurements in each of the following situations could be considered **accurate**:

- Freddie measures a pencil that has an actual length of 15.8 cm. He records that his pencil measures 10 cm. **NOT Accurate**
- An oven's actual temperature is 251°F. You read the temperature and record it as 250°F. **close enough to be accurate**
- When weighing a bag of wheat seed that actually weighs 98.63 kg, the grain elevator reports that it weighs 100 kg. **NOT accurate, because it is not the actual weight**

Example 5

Describe a measurement situation that would demand a high degree of accuracy.

- measuring the final time for the 100 metre olympic race.
- measuring medication for a person.

Describe a measurement situation that would not demand a high degree of accuracy.

- Measuring how far school is from home.
- The number of people at an outdoor music concert.