

## Reference data to help calibrate rulers, weight scales

Calibration: There is a lengthy legal definition (see ISO VIM), but for students—a calibration is verifying (testing) that a measurement instrument is operating correctly. Steps in calibration always include making measurements of a known standard (sometimes called reference), and checking that the resulting measurements are acceptable. The reference standard used needs to be more accurate than the instrument being tested. Sometimes, it will be necessary to adjust or repair the instrument, and then, repeat the test.

The items listed here may be helpful to you and your students:

<b>Coin Specifications</b>							
The following table gives specifications for The United States Mint legal tender coins presently in production for United States Mint Annual Sets.							
Denomination	Cent	Nickel	Dime	Quarter Dollar	Half Dollar	Presidential \$1	Native American \$1 Coin
<b>Composition</b>	Copper Plated Zinc 2.5% Cu Balance Zn	Cupro-Nickel 25% Ni Balance Cu	Cupro-Nickel 8.33% Ni Balance Cu	Cupro-Nickel 8.33% Ni Balance Cu	Cupro-Nickel 8.33% Ni Balance Cu	Manganese-Brass 88.5% Cu 6% Zn 3.5% Mn 2% Ni	Manganese-Brass 88.5% Cu 6% Zn 3.5% Mn 2% Ni
<b>Weight</b>	2.500 g	5.000 g	2.268 g	5.670 g	11.340 g	8.1 g	8.1 g
<b>Diameter</b>	0.750 in. 19.05 mm	0.835 in. 21.21 mm	0.705 in. 17.91 mm	0.955 in. 24.26 mm	1.205 in. 30.61 mm	1.043 in. 26.49 mm	1.043 in. 26.49 mm
<b>Thickness</b>	1.52 mm	1.95 mm	1.35 mm	1.75 mm	2.15 mm	2.00mm	2.00 mm
<b>Edge</b>	Plain	Plain	Reeded	Reeded	Reeded	Edge-Lettering	Edge-Lettering
<b>No. of Reeds</b>	N/A	N/A	118	119	150	N/A	N/A

*Content last updated on September 20, 2016*

Standard “letter size” US paper is 8.5 in × 11 in (216 mm × 279 mm) to ± 0.08 in (2 mm).

A standard CD, DVD, or Blu-ray disc has a diameter of 120 mm.

**ISO 7810:2003 (reaffirmed 2013)** gives standard sizes for ID’s: ID-1 (drivers’ licenses, credit cards, ATM cards): 85.60 mm × 53.98 mm × 0.76 mm (~ 3.370 in × 2.125 in × 0.030 in).

Pure water has a density of approximately 0.998 kg/liter at 20°C.

Food packaged by weight (flour, butter, chocolate chips, etc.) is generally good to ±4% of labeled weight (once removed from the package).