METRIC STYLE GUIDE

FOR THE NEWS MEDIA

U.S. DEPARTMENT OF COMMERCE
Technology Administration
National Institute of Standards and Technology

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In most cases, familiarity with the following metric units will be sufficient for everyday transactions:

	Name	Symbol	Approximate Size
length	meter	m	39 1/2 inches
	kilometer	km	0.6 mile
	centimeter	cm	width of a paper clip
	millimeter	mm	thickness of a dime
area	hectare	ha	2 1/2 acres
	square meter	m^2	1.2 square yards
weight (or mass)	gram	g	weight of a paper clip
	kilogram	kg	2.2 pounds
	metric ton	t	long ton (2240 pounds)
volume	liter	L	one quart and 2 fluid ounces
	milliliter	mL	1/5 teaspoon
pressure	kilopascal	kPa	atmospheric pressure is about 100 kPa

Units of **time** and **electricity** are already metric units.

The Celsius **temperature scale** should be used; familiar points on this scale are:

	°C	°F
Temperature at which water freezes	0	32
Temperature at which water boils	100	212
Normal body temperature	37	98.6
Comfortable room temperature	20-25	68-77

Prefixes

Some of the metric units listed above include prefixes such as kilo, centi, and milli. Prefixes, added to a unit name, create larger or smaller units by factors that are powers of 10. For example, add the prefix kilo, which means a thousand, to the unit gram to indicate 1000 grams; thus 1000 grams become 1 kilogram. The more common prefixes are shown in **Table 1.**

Spelling

All units and prefixes should be spelled as shown in this guide.

Conversions

Conversions should follow a rule of reason: do not use more significant digits than justified by the precision of the original data. For example, 36 inches should be converted to 91centimeters, not 91.44 centimeters (36 inches x 2.54 centimeters per inch = 91.44 centimeters), and 40.1 inches converts to 101.9 centimeters, not 101.854. **Table 2** lists many of the more commonly used conversion factors.

Capitals

UNITS: The names of all units start with a lower case letter except, of course, at the beginning of a sentence. There is one exception: in "degree Celsius" (symbol °C) the unit "degree" is lower case, but the modifier "Celsius" is capitalized. Thus, body temperature is written as 37 degrees Celsius.

SYMBOLS: Unit symbols are written in lower case letters except for liter and those units derived from the name of a person (m for meter, but W for watt, Pa for pascal, etc.).

PREFIXES: Symbols of prefixes that mean a million or more are capitalized and those less than a million are lower case (M for mega (millions), m for milli (thousandths)).

Plurals

UNITS: Names of units are made plural only when the numerical value that precedes them is more than one. For example, 0.5 liter, but 250 milliliters. Zero degrees Celsius is an exception to this rule.

SYMBOLS: Symbols for units are never pluralized (250 mm = 250 millimeters).

Incorrect Terms

The prefix "kilo" stands for one thousand of the named unit. It is not a stand-alone term in the metric system. The most common misuse of this is the use of "kilo" for a "kilogram" of something. The word "micron" is an obsolete term for the quantity "micrometer." Also "degree centigrade" is no longer the correct unit term for temperature in the metric system; it has been replaced by degree Celsius.

Pronunciation

The pronunciation of common metric units is well known, except for pascal, which rhymes with rascal, and hectare, which rhymes with bare.

The first syllable of every prefix is accented, not the second syllable. Example: KILL-oh-meter, not kil-LOM-meter.

Spacing

A space is used between the number and the symbol to which it refers. For example: 7 m, 31.4 kg, 37 °C.

When a metric value is used as a one-thought modifier before a noun, hyphenating the quantity is not necessary. However, if a hyphen is used, write out the name of the metric quantity with the hyphen between the numeral and the quantity. For example:

a 2-liter bottle, NOT a 2-L bottle;
a 100-meter relay, NOT a 100-m relay;
35-millimeter film, NOT 35-mm film.

Spaces are not used between prefixes and unit names nor between prefix symbols and unit symbols. Examples: milligram, mg; kilometer, km.

Period

DO NOT use a period with metric unit names and symbols except at the end of a sentence.

Decimal Point

The dot or period is used as the decimal point within numbers. In numbers less than one, zero should be written before the decimal point. Examples: 7.038 g; 0.038 g.

For More Detail

Approximate conversions for many units are given in **Table 2**. Some writers will require detailed information on units peculiar to their fields.

Detailed metric information and precise conversions are available in NIST Special Publication 811 (SP 811), "Guide for the Use of the International System of Units (SI)." It is available by calling the NIST General Inquiries Office at (301) 975-3058, email: inquiries@nist.gov.

A "Metric Editorial Guide" is available from the American National Metric Council, 4340 East West Highway, Suite 401, Bethesda, MD 20814-4411; (301) 718-6508. A "Guide to the Use of the Metric System" is available from the U.S. Metric Association, 10245 Andasol Avenue, Northridge, CA 91325-1504; (818) 368-7443.

Table 1: COMMON PREFIXES FOR METRIC UNITS

Factor		Prefix	Symbol
1 000 000	10^6	mega	M
1 000	10^3	kilo	k
0.01	10^{-2}	centi	c
0.001	10^{-3}	milli	m
0.000 001	10^{-6}	micro	μ

Table 2: METRIC CONVERSION FACTORS (Approximate)

Symbol	When you know Number of	Multiply by	To find Number of	Symbol
		LENGTH		
in	inches	2.5	centimeters	cm
ft	feet	0.3	meters	m
yd	yards	0.9	meters	m
mi	miles	1.6	kilometers	km
		AREA		
in^2	square inches	6.5	square centimeters	cm^2
ft^2	square feet	0.09	square meters	m^2
yd^2	square yards	0.8	square meters	m^2
mi^2	square miles	2.6	square kilometers	km^2
	acres	0.4	hectares	ha
		WEIGHT		
oz	ounces	28	grams	g
lb	pounds	0.45	kilograms	kg
	short tons (2000 pounds)	0.9	metric tons	t
		VOLUME		
tsp	teaspoons	5	milliliters	mL
Tbsp	tablespoons	15	milliliters	mL
in^3	cubic inches	16	milliliters	mL
fl oz	fluid ounces	30	milliliters	mL
c	cups	0.24	liters	L
pt	pints	0.47	liters	L
qt	quarts	0.95	liters	L
gal	gallons	3.8	liters	L
ft^3	cubic feet	0.03	cubic meters	m^3
yd^3	cubic yards	0.76	cubic meters	m^3
		PRESSURE		
inHg	inches of mercury	3.4	kilopascals	kPa
psi	pounds per square inch	6.9	kilopascals	kPa
		TEMPERATURE (exact)		
^oF	degrees Fahrenheit	5/9 (after subtracting 32)	degrees Celsius	^oC

Toward a Metric America

- The Metric Program seeks to accelerate the national transition to the metric system of measurement, the preferred system of weights and measures for United States trade and commerce.

- Implementing the 1988 amendments to the Metric Conversion Act of 1975, the Metric Program coordinates the metric transition activities of all Federal agencies.

- The Program provides leadership and assistance on metric use and conversion to businesses, state and local governments, standards organizations, trade associations, and the educational community.

- Under the banner "Toward a Metric America," the Metric Program has sought to build state and regional partnerships to: (1) accelerate adoption of the metric system in trade and commerce; (2) encourage use of the metric system in all facets of education, including honing of worker skills; and (3) develop positive and enjoyable programs of public awareness.

- Current Metric Program initiatives focus on education and public awareness to gain broad-based support for national metrication from industry and the general public.

- The news media have an important role in assisting the American public through this period of metric transition. Increasingly, workers are being trained in the metric units required to perform their jobs. Americans will compete more successfully in the global marketplace when they understand and "speak" the international language of measurement. The Nation's metric transition will benefit from the media's correct and positive use of metric language and symbols. The units, symbols, and other notations used in this guide are in accord with the International System of Units, which is interpreted or modified for use in the United States by the Secretary of Commerce (55 FR 52242, December 20, 1990).

NIST

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