

## الجوانب العلمية : الاختصارات والرموز

تختصر بعض الكلمات إلى عدد أقل من الحروف ، وتعرف تلك الاختصارات باسم abbreviations ، ويدخل ضمنها أيضا - في هذا المقام - الـ Arconyms ، وهي الكلمات المكونة من الحرف الأول - أو الحروف الأولى - من كل من الأجزاء المتتابعة أو الرئيسية لاسم أو مصطلح مركب ( مثلا . . تختصر The American Society for Horticultural Science إلى ASHS ) .

أما الرموز Symbols فهي علامات أو حروف تمثل عمليات ، أو كميات ، أو عناصر ، أو علاقات ، أو درجات ، أو نوعيات معينة .

ويفيد استخدام الاختصارات والرموز كثيرا في تتبع قراءة البحوث ، وخاصة التعبيرات المعقدة منها . إلا أن الإسراف الشديد في استخدامها يعقد القراءة أكثر مما يسرها .

### قواعد استخدام الاختصارات والرموز

يخضع استخدام الاختصارات والرموز للقواعد التالية :

١ - يجب أن تتفق الاختصارات المستخدمة في البحث أو الرسالة مع النظام الدولي للوحدات الذي سبقت مناقشته في الفصل الثامن .

٢ - تكتب جميع الرموز والاختصارات بحروف رومانية ( إنجليزية غير مائلة ) أيا كان البنط المستخدم مع الكلمات المحيطة بها ( أى حتى لو كانت الكلمات المحيطة بها بحروف مائلة ) .

٣ - لا تستخدم رموز أو اختصارات وحدات القياس القياسية - في متن البحث أو الرسالة - إلا إذا سبقها العدد الذي يمثل القياس ذاته .

مثال :

Trunk diameter was 30 cm.

Trunk diameter was measured in centimeters.

٤ - لا يجوز الخلط بين الرموز والأسماء الكاملة في نفس التعبير ؛ فمثلا . . يكتب  $ms^{-1}$  ، أو meters per second ، ولكن لا يجوز استعمال التعبير m per second ، أو m per s . وكذلك يكتب  $J kg^{-1}$  ، و  $J/kg$  ، و Joules per kilogram ، ولكن لا يجوز استعمال التعبير  $Joules kg^{-1}$  أو  $J/kilograms$  ، أو  $Joules/kg$  .

٥ - يستخدم نفس الرمز ونفس الاسم المختصر لصورتى المفرد والجمع من وحدة القياس ؛ فمثلا . . يكتب 1 m ، و 10 m ، ولكن يكتب كذلك 1 meter ، و 10 meters . ولكن يراعى استخدام الفعل المناسب لكل حالة منها ؛ فيكتب مثلا . . 10 cm are . ويستثنى من هذه القاعدة بعض الاختصارات ؛ مثل :

الاسم المختصر الكامل	الاسم المختصر المفرد	الاسم المختصر الجمع
cultivar(s)	cv	cvs
editor(s)	ed	eds
Numbers(s)	no.	nos
page(s)	p	pr

٦ - تترك مسافة واحدة خالية بين القيمة الرقمية والرمز المستخدم ( مثلا . . 12 ml ، وليس 12ml ) .

٧ - لا تجوز كتابة مختصر كلمات تظهر بنفسها في نفس الجملة - مثل the concentration - concentration .

٨ - إذا تطلب الأمر ذكر عددٍ ما كتابةً - كما يحدث إذا جاء العدد في بداية الجملة - فإن وحدة القياس يجب ذكرها كاملة ( دون اختصارات ) هي الأخرى ( مثال : Twelve kilograms ، وليس Twelve kg ) .

٩ - لايجوز بدء الجملة برموز أو اختصارات .

١٠ - تذكر الاختصارات المستحدثة ؛ كما هي الحال بالنسبة لاختصارات المركبات العضوية المستخدمة أو الطرق البحثية المتبعة في الدراسة - بأحرف كبيرة بين قوسين - بعد المرة الأولى التي تذكر فيها الأسماء الكاملة لتلك المركبات أو الطرق ؛ مثلاً . . 'High Performance Liquid Chromatography (HPLC)' ، وتستخدم تلك الاختصارات بعد ذلك .

١١ - يُعدّ المستخلص abstract جزءاً أساسياً من البحث ؛ وبذا . . فإن جميع الاختصارات التي تحدد فيه لايجوز تكرارها - وإعادة تحديدها - في أجزاء البحث التالية .

١٢ - يُفضل عدم اشمال عنوان البحث على اختصارات - محددة من قبل الباحث - لكلمات يتكرر ورودها في البحث ، بل يتعين تأجيل ذلك إلى الخلاصة ، أو أجزاء البحث الأخرى التي تذكر فيها لأول مرة .

١٣ - لايجوز ترك مسافات خالية بين الحروف الكبيرة المكونة لرموز الكلمات سواء أكانت لمركبات كيميائية ، أم طرق بحثية ، أم هيئات حكومية ، أم مؤسسات دولية ، أم مناطق جغرافية . . إلخ .

١٤ - تترك مسافة واحدة خالية بين الأجزاء المكونة للاختصارات التي تكتب بأحرف صغيرة ، ولكن يشترط لذلك عدم وجود نقطة بين تلك الأجزاء ؛ مثل : et al. ، و dry wt ، و sp gr ، ولكن لاترك المسافة عند وجود النقطة ، مثل : a.i. ، و i.e. ، و e.g. .

١٥ - كذلك تكتب اختصارات عديد من المصطلحات المركبة بحروف صغيرة دون ترك مسافات خالية بينها ؛ مثل : psi ، و ppm ، و df .

١٦ - كما أوضحنا في الفصل الخامس - وعلى خلاف ما كان شائعاً من قبل - فإن اختصارات الكلمات اللاتينية لا تكتب بحروف مائلة ، ولا يوضع تحتها خط ، ولكن توضع بعدها نقطة ، ومن أمثلة ذلك ما يلي :

الكلمة المختصرة	المعنى	الأصل اللاتيني
et al.	وآخرون	<u>et alia</u>
etc.	إلخ	et cetera
i.e.	بمعنى أن	<u>id est</u>
e.g.	على سبيل المثال	exempli gratia

١٧ - توضع دائماً فاصلات commas تفصل الاختصارات i.e. ، و e.g. ، و viz. عما يسبقها ، وعما يليها في الجملة ؛ أى إنها تُحصر دائماً بين commas ، ولكن قد تسبقها فاصلة منقوطة semicolon حسب موقعها في الجملة .

١٨ - يجب عدم استخدام الرمز @ ويستبدل بكلمة at .

١٩ - يجب كذلك عدم استخدام الرمز # ويستبدل بكلمة number في متن البحث ، أو بالرمز no. مع العدد الرقمي في عناوين أعمدة الجداول ( يلاحظ أن الرمز هو no. وليس No. أو no ) .

٢٠ - يُقصر استخدام الرمز (\*) على معنوية الاختلافات في الجداول ، ولا يستخدم في التذييل إلا لتوضيح معنى الرمز .

٢١ - لا يجب استخدام رموز العلامات التجارية ؛ مثل ® ، و ™ .

٢٢ - لا تختصر أسماء الأجناس إذا ذكرت بمفردها .

٢٣ - تتطلب بعض الدوريات عمل تذييل غير مرقم ( ضمن صفحة التذييل ) بجميع الاختصارات - المحددة من قِبَل المؤلف - التي يجرى ذكرها أكثر من خمس مرات في البحث .

٢٤ - لاتترك مسافة خالية بين الاختصارات والحروف الأولى التي تنتهى بنقطة ، ولكن تترك مسافة خالية فى حالات الترخيم contraction ( الاقتصار على الحروف البارزة من الكلمات التي يراد اختصارها ) والحروف الأولى أو الأرقام ؛ كما فى الأمثلة التالية :

U.S.

U.N.

B.S., Ph.D., B.Sc.

Texas A&M

A.D., B.C.

i.e., e.g. (but op. cit.)

٢٥ - لاتترك مسافة خالية بين العلامات الرياضية ( مثل علامات الضرب والطرح والقسمة . . . إلخ ) ومايجاورها من أرقام ، ولكن تترك مسافة خالية قبل وبعد علامة الضرب إذا استخدمت بمعنى التهجين أو التلقيح ، أو قوة التكبير ؛ كما فى الأمثلة التالية :

i-vii+1-288 pages

The equation A+B

The result is  $4 \times 4$

$20,000 \pm 5,000$

Early June  $\times$  Bright (crossed with)

$\times 4$  (magnification)

## بعض الاختصارات والرموز الشائعة

نوضح فى القوائم التالية عددا من الاختصارات والرموز الشائعة الاستعمال فى البحوث والرسائل العلمية ، وهى متنوعة وتُمثّل ماتقره بعض الدوائر والدوريات

العلمية المرموقة والمهتمة بتوحيد الاختصارات والرموز على أسس علمية سليمة . ومن المؤكد اختلاف بعض الاختصارات بين بعض القوائم ، وتكرار بعضها الآخر ، ولكننا أبقينا عليها - كما هي في كل قائمة - حرصاً منا على دقة النقل عنها من ناحية ، وليبان أوجه وحدود الاختلاف بين المؤسسات العلمية في هذا الشأن من ناحية أخرى ؛ بهدف إبراز عدم جدوى التعصب لرموز أو اختصارات بعينها ، وعدم صحة قيام الباحث بوضع اختصارات ورموز من تأليفه تخرج عن نطاق المؤلف والشائع والمعترف به .

### ١ . قائمة الاختصارات والرموز التي نقرأها دورية *Plant Physiology*

<i>Prefixes to the names of units</i>	بادئات لأسماء وحدات القياس
kilo ( $10^3$ )	k
mega ( $10^6$ )	M
giga ( $10^9$ )	G
tera ( $10^{12}$ )	T
deci ( $10^{-1}$ )	d
centi ( $10^{-2}$ )	c
milli ( $10^{-3}$ )	m
micro ( $10^{-6}$ )	$\mu$
nano ( $10^{-9}$ )	n
pico ( $10^{-12}$ )	p
femto ( $10^{-15}$ )	f
atto ( $10^{-18}$ )	a
<i>Units of concentration</i>	وحدات التركيز
molar (mole/liter)	M
millimolar (millimole/liter)	mM (in preference to $10^{-3}$ M)
micromolar (micromole/liter)	$\mu$ M (in preference to $10^{-6}$ M)
<i>Units of length</i>	وحدات الطول
meter	m
centimeter	cm
millimeter	mm
micrometer	$\mu$ m (not $\mu$ )
nanometer	nm (not n $\mu$ )
Ångstrom (0.1 nm)	Å
<i>Units of area and volume</i>	وحدات المساحة والحجم
liter	L, or spell out if used without reference to another unit of measure
milliliter	mL
microliter	$\mu$ l. (not $\lambda$ )
<i>Units of mass</i>	وحدات الكتلة
gram	g
kilogram	kg
milligram	mg
microgram	$\mu$ g (not $\gamma$ )

<i>Units of time</i>	وحدات الوقت
second	s
minute	min
hour	h
day	d
<i>Units of temperature</i>	وحدات الحرارة
kelvin	K (20 K)
Celsius	°C (20°C)
Accepted Abbreviations	الاختصارات المقبولة
abscisic acid	ABA
absorbance (absorbance at 340)	A (A <sub>340</sub> )
1-aminocyclopropane-1-carboxylic acid	ACC
ampere	A
adenosine 5'-mono-, di-, triphosphate	AMP, ADP, ATP
atmosphere(s)	atm
base pair	bp
benzyladenine	BA
becquerel	Bq, 1Ci = 3.7 × 10 <sup>10</sup> Bq, or m.e., etc
N,N'-bis(2-hydroxyethyl)glycine	POPOP
p-bis-2-(5-phenyloxazolyl)-benzene	POPOP
bovine serum albumin	BSA
calorie	cal
chlorophyll	chl
chlorophyllide	Chlide
coenzyme A and its acyl derivatives	CoA and acetyl-CoA
concanavalin A	Con A
concentration	[ ], i.e. [ABA] or other substance
counts per minute	cpm
Crassulacean acid metabolism	CAM
cultivar	cv
curie	Ci
cyclic adenosine 3':5'-monophosphate	cAMP
cytidine 5'-mono-, di-, triphosphate	CMP, CDP, CTP
cytochrome	Cyt
dalton, kilodalton	D, kD
days after flowering	DAF
deoxyribonuclease	DNase
deoxyribonucleic acid	DNA
complementary DNA	cDNA

chloroplast DNA	ctDNA
mitochondrial DNA	mtDNA
nuclear DNA	nDNA
deuterium	$^2\text{H}$
2,4-dichlorophenoxyacetic acid	2,4-D
3-(3,4-dichlorophenyl)-1,1-dimethylurea, diuron	DCMU
diethylaminoethyl	DEAE
dimethyl sulfoxide	DMSO
2,5-diphenyloxazole	PPO
disintegrations per minute	dpm
dithioerythritol	DTE
dithiothreitol	DTT
einstein	E
electron microscopy	EM
endoplasmic reticulum	ER
enzyme-linked immunosorbent assay	EI ISA
equation	Eq.
ethylenediaminetetraacetate	EDTA
ethyleneglycol-bis ( $\beta$ -aminoethyl ether) $N,N'$ -tetraacetic acid	EGTA
equilibrium constant	K
equivalent	eq
farad	F
ferredoxin	Fd
Figure	Fig (parentheses only)
gas chromatography	GC
gas chromatography-mass spectrometry	GC-MS
gas liquid chromatography	GLC
gauss	G ( $10^{-4}$ T)
gibberellic acid	GA <sub>3</sub>
giberellin	GA <sub>n</sub> or GA (if generic)
glutathione and its oxidized form	GSH, GSSG
gravity	g (5,000g)
guanosine 5'-mono-, di-, triphosphate	GMP, GDP, GTP
hectare	ha
N-2-hydroxyethylpiperazine-N'-2-ethanesulfonic acid	Hepes
high performance liquid chromatography	HPLC
indoleacetic acid	IAA
infrared	IR
infrared gas analyzer	IRGA
inner diameter	i.d.
inosine 5'-mono-, di-, triphosphate	IMP, IDP, ITP
international unit	IU
isoelectric focusing	IEF

joule	J
kilobase pair	kb
least significant difference	LSD
logarithm (common, base 10)	log
logarithm (natural)	ln
long-day	LD
long-day plant	LDP
mass spectrometry	MS
Michaelis constant	$K_m$
milliequivalent(s)	meq
mole (a gram molecule)	mol
molecular weight	mol wt
relative molecular weight	$M_r$
2-( <i>N</i> -morpholino)-ethanesulfonic acid	Mes
3-( <i>N</i> -morpholino)-propanesulfonic acid	Mops
nicotinamide adenine dinucleotide and its reduced form	NAD (or NAD <sup>+</sup> ), NADH
nicotinamide adenine dinucleotide phosphate and its reduced form	NADP (or NADP <sup>+</sup> ), NADPH
normal (concn)	N
not significant	NS
nuclear magnetic resonance	NMR
number	No. (tables and parentheses)
ohm	$\Omega$
outer diameter	o.d.
pascal (unit of pressure)	Pa; 100 kPa = 1 bar
percent	%
per mil	$\text{‰}$
phenylmethylsulfonyl fluoride	PMSF
phosphate or orthophosphate (inorganic)	Pi
phosphate-buffered saline	PBS
photosynthetic photon flux density	PPFD (usually $\mu\text{mol m}^{-2} \text{s}^{-1}$ )
photosynthetically active radiation	PAR (usually $\text{W m}^{-2}$ )
photosystem I or II	PSI or PSII
phytochrome—far red-absorbing form	Pfr
phytochrome—red-absorbing form	Pr
1,4-piperazinediethanesulfonic acid	Pipes
polyacrylamide gel electrophoresis	PAGE

polyethylene glycol	PEG
polyvinylpyrrolidone	PVP
pounds per square inch	p.s.i.
precipitate	ppt (in tables)
protochlorophyll	Pchl
protochlorophyllide	Pchlide (Pchl(ide) when species are not clear)
pyrophosphate (inorganic)	PPi
rate constant	k
relative humidity	RH
respiratory control	RC
respiratory quotient	RQ
retardation factor	R <sub>r</sub>
revolutions per minute	rpm
ribonuclease	RNase
ribonucleic acid	RNA
ribulose-1, 5-bisphosphate carboxylase/oxygenase	Rubisco
messenger RNA	mRNA
nuclear RNA	nRNA
ribosomal RNA	rRNA
transfer RNA	tRNA
rough endoplasmic reticulum	RER
short-day	SD
short-day plant	SDP
smooth endoplasmic reticulum	SER
sodium dodecyl sulfate	SDS
species	sp. (when part of binomial)
standard deviation of series	sd
standard error of mean	se
temperature	temp (in tables)
temperature, melting	T <sub>m</sub>
tesla	T
thin layer chromatography	TLC
trichloroacetic acid	TCA
trifluoroacetic acid	TFA
tris(hydroxymethyl)-aminomethane	Tris
<i>N</i> -tris(hydroxymethyl)methyl-2-aminoethanesulfonic acid	Tes
<i>N</i> -tris(hydroxymethyl)-methylglycine	Tricine
tritium	<sup>3</sup> H
ultraviolet	UV
uridine 5'-mono-, di-, triphosphate	UMP, UDP, UTP

variety	var
volt(s)	V
volume(s)	vol (in tables)
volume/volume (concn)	v/v
watt	W
weight	wt (tables)
weight/volume (concn)	w/v

#### Symbols for Amino Acids

#### رموز الأحماض الأمينية

تستخدم الرموز الثلاثية الحروف في المتن مباشرة دونما حاجة إلى تعريفها .  
يُقتصر استعمال الرموز المفردة الحروف على سلاسل الأحماض الطويلة ،  
وعلى مقارنات السلاسل في الجداول والأشكال والقوائم .

alanine	Ala (A)
arginine	Arg (R)
asparagine	Asn (N)
aspartic acid	Asp (D)
cysteine	Cys (C)
glutamine	Gln (Q)
glutamic acid	Glu (E)
glycine	Gly (G)
histidine	His (H)
hydroxylysine	Hyl
hydroxyproline	Hyp
isoleucine	Ile (I)
leucine	Leu (L)
lysine	Lys (K)
methionine	Met (M)
ornithine	Orn
phenylalanine	Phe (F)
proline	Pro (P)
serine	Ser (S)
threonine	Thr (T)
tryptophan	Trp (W)
tyrosine	Tyr (Y)
valine	Val (V)

#### Symbols for Sugars

#### رموز السكريات

arabinose	Ara
galactose	Gal
glucose	Glc
mannose	Man
fructose	Fru
fucose	Fuc
ribose	Rib
sucrose	Suc
xylose	Xyl
nucleotide diphosphate sugars	UDP-Gal, GDP-Man

مشتقات السكريات

Derivatives of Sugars

N-acetylglucosamine	GlcNAc
glucosamine	GlcN
2-deoxyglucose	dGlc
2-deoxyribose	dRib
glucuronic acid	GlcUA

Chemical Compounds

بادئات لأسماء المركبات الكيميائية

ortho	<i>o</i>
meta	<i>m</i>
para	<i>p</i>
normal	<i>n</i>
secondary	<i>sec</i>
tertiary	<i>tert</i>

٢ - قائمة الاختصارات والرموز التي تقرها جمعية علوم البساتين الأمريكية

لدورياتها

الكلمة أو الوحدة	الرمز أو الاختصار	الاستعمال المسموح به
abstract	Abstr.	literature citations
acre	spell out	all uses
active ingredient	a.i.	with numerals only (do not use with approved common names)
after noon	PM	with numerals only (small caps)
alternating current	AC	2nd & subsequent uses
analysis of variance	ANOVA	2nd & subsequent uses
angstrom	Å	with numerals only
anno Domini	AD	with numerals only (small caps)
area	A	SI symbol
atmosphere	atm	with numerals only
average	avg	table column heads only
bachelor of science	BS	all uses
before Christ	BC	with numerals only (small caps)

before noon	AM	with numerals only (small caps)
boiling point	bp	with numerals (temperature) only
British thermal unit	BTU	with numerals only; avoid use
Brix	°B	with numerals only
by (dimension)	x	symbol with numerals ("math x") no longer used; convert to joules
calorie	cal	all uses; degree symbol must precede
Celsius, degree	°C	with numerals only
cent (U.S.)	¢	with numerals only
centimeter	cm	with numerals only
chilling injury	CI	2nd & subsequent uses
chi-square value	$\chi^2$	statistical reporting (lowercase Greek chi with superscript 2)
circumference	circumf.	table column heads only
coefficient of determination	$R^2, r^2$	statistical reporting (italic with superscript 2); $R^2$ for 3 or more variables, $r$ for 2 variables
coefficient of variation	CV	all uses (small caps)
Company	Co.	all uses
concentrated	concd	table column heads only
concentration	concn	table column heads only
controlled atmosphere	CA	2nd & subsequent uses
Corporation	Corp.	all uses
correlation coefficient	See "sample coefficient of linear correlation"	
crossed with	x	(lowercase Helvetica x)

الاستعمال المسموح به

الرمز أو الاختصار

الكلمة أو الوحدة

الكلمة أو الوحدة	الرمز أو الاختصار	الاستعمال المسموح به
cross species (interspecific hybrid)	X	("math x", with no space between the symbol and the specific epithet)
cubic centimeter	cm <sup>3</sup> (not cc)	with numerals only
cubic meter	m <sup>3</sup>	with numerals only
cultivar(s)	cv., cvs.	formal nomenclature only (after a specific epithet)
day	spell out	all uses
degree (angular)	°	with numerals only
degree (temperature)	°	with numerals and abbreviations for Celsius or Fahrenheit
degree(s) of freedom	df	statistical reporting
density, mass	$\rho$	symbol (lowercase Greek rho)
Department	Dept.	all uses, except in headlines
diameter	diam	table column heads only
differential thermal analysis	DTA	2nd & subsequent uses
direct current	DC	2nd & subsequent uses
doctor of philosophy	PhD	all uses; do not use "Dr."
dollar (U.S.)	\$	with numerals only
doubtful name ( <i>nomen dubium</i> )	nom.dub	formal nomenclature only
dry weight	dry wt	table column heads only
east	E	with numerals only
edition	ed.	book reviews; literature citations
editor(s)	ed., eds.	book reviews; literature citations; enclose in parentheses
einstein	E	with numerals only

الكلمة أو الوحدة	الرمز أو الاختصار	الاستعمال المسموح به
electron microscopy	EM	2nd & subsequent uses
electron volt	eV	with numerals only
energy	E	SI symbol
equals	=	(spaces on both sides of symbol)
equation	Eq.	with numerals only; enclose numeral in brackets as side heading for equation within text
equivalent	eq	with numerals only
<i>et alia</i> (and others)	et al.	all uses
<i>et cetera</i> (and so forth)	etc.	all uses (but avoid using, if possible)
<i>et sequentia</i> (and the following ones)	et seq.	all uses
<i>exempli gratia</i> (for example)	e.g.	all uses
experiment	Expt.	with numerals; table column heads
exponent, -ial	exp	table column heads only
Fahrenheit, degree	°F	all uses; degree symbol must precede; dual reporting only (°C must precede)
Figure	Fig.	with numerals only; caption headings and in parentheses in text
filial generations	F <sub>1</sub> , F <sub>2</sub>	all uses (with subscripts)
foot	ft	with numerals only (dual reporting, first reference is metric)
footcandle	fc	with numerals only
freezing point	f p	with numerals (temperature) only
frequency	f	with numerals only
fresh weight	fresh wt	table column heads only
gallon	gal	with numerals only (dual reporting, first reference is metric)

الكلمة أو الوحدة	الرمز أو الاختصار	الاستعمال المسموح به
gas chromatography	GC	2nd & subsequent uses
gas-liquid chromatography	GLC	2nd & subsequent uses
genus	gen.	formal nomenclature only
gram	g	with numerals only
gravity	g	with numerals only (italic)
hectare	ha	with numerals only
height	ht	table column heads only
hertz	Hz	with numerals only
highest significant difference	HSD	with numerals only (small caps)
high performance liquid chromatography	HPLC	2nd & subsequent uses
hour (unit)	hr h (with SI units)	with numerals; table column heads; not abbreviated in abstract
hours (24-hr time)	HR	clock time only (small caps)
hydrogen-ion concentration, negative log of	pH	all uses
ice nucleation: active	INA	2nd & subsequent uses (adjective)
<i>id est</i> (that is)	i.e.	all uses
illustration(s)	illus.	book reviews, literature citations
inch(es)	spell out	all uses (first reference is metric)
infrared	IR	2nd & subsequent uses
inside diameter	i.d.	all uses
joule	J	with numerals only

الاستعمال المسموح به

الرمز أو الاختصار

الكلمة أو الوحدة

الكلمة أو الوحدة	الرمز أو الاختصار	الاستعمال المسموح به
kelvin	K	SI unit for temperature (do not use)
kilocalorie	kcal	with numerals only
kilogram	kg	with numerals only
kilolux	klx	with numerals only
kilometer	km	with numerals only
kilovolt	kV	with numerals only
latitude	lat.	with numerals only
leaf water potential	LWP	2nd & subsequent uses
least significant difference	l.s.d.	with numerals only (small caps)
liter	spell out	all uses; do not use "L."
logarithm, common (to base 10)	log	with numerals only
logarithm, natural	ln	with numerals only
longitude	long.	with numerals only
lumen	lm	with numerals only
lux	lx	with numerals only
magnification, power of	x	before numeral, no space (e.g., X400) ("math x")
Malling	M	followed by space (e.g., M 26)
Malling Merton	MM	followed by space (e.g., MM 106)
master of science	MS	all uses
maximum	max	table column heads only
mean of a sample	$\bar{X}$ , $\bar{Y}$	statistical reporting (uppercase under bar)
mean of the population	$\mu$	statistical reporting (lowercase Greek mu)

الاستعمال المسموح به

الرمز أو الاختصار

الكلمة أو الوحدة

الكلمة أو الوحدة	الرمز أو الاختصار	الاستعمال المسموح به
melting point	mp	with numerals (temperature) only
meter	m	with numerals only
metric ton	MT	with numerals only
mho	spell out	all uses
microequivalent	$\mu$ eq	with numerals only (lowercase Greek mu)
microgram	$\mu$ g	with numerals only (lowercase Greek mu)
micrometer (formerly, micron)	$\mu$ m	with numerals only (lowercase Greek mu)
micromolar (concentration)	$\mu$ M	with numerals only (lowercase Greek mu; small cap)
micromole (mass)	$\mu$ mol	with numerals only (lowercase Greek mu)
mile	mi	with numerals only (dual reporting, first reference is metric)
milliequivalent	meq	with numerals only
milligram	mg	with numerals only
milliliter	ml	with numerals only
millimeter	mm	with numerals only
millimho	mho	with numerals only
millimolar (concentration)	mM	with numerals only (small cap)
millimole (mass)	mmol	with numerals only
millivolt	mV	with numerals only
minimum	min	table column heads only
minus	-	(spaces on both sides of symbol)
minute (angular)	'	with numerals only
minute (time)	min	with numerals; table column heads; not abbreviated in abstract

الاستعمال المسموح به

الرموز أو الاختصار

الكلمة أو الوحدة

الكلمة أو الوحدة	الرموز أو الاختصار	الاستعمال المسموح به
molar (moles per liter)	M	with numerals only (small cap)
mole	mol	with numerals only
month	mo	table column heads only
multiplied by	x	with numerals ("math x")
nanometer	nm	with numerals only
nanosecond	ns	with numerals only
new genus ( <i>genus novum</i> )	gen.nov.	formal nomenclature only (only after a generic name)
new name ( <i>nomen novum</i> )	nom.nov.	formal nomenclature only
new species ( <i>species nova</i> )	sp.nov.	formal nomenclature only (only after a specific epithet)
newton	N	with numerals only
new variety ( <i>varietas nova</i> )	var.nov.	formal nomenclature only (only after a varietal name)
no data	ND	in tables only
no date	n.d.	literature citations
nonsignificant	NS	all uses (small caps)
normal (gram-equivalents per liter)	N	with numerals only (small cap)
north	N	with numerals only
number	no.	table column heads; literature citations
number of observations in a sample	n	statistical reporting
number of observations in the population	N	statistical reporting
ounce	oz	with numerals only (dual reporting, first reference is metric)
outside diameter	o.d.	all uses

الاستعمال المسموح به

الرمز أو الاختصار

الكلمة أو الوحدة

page(s)	الرمز أو الاختصار	الاستعمال المسموح به
	P	with numerals only; do not use "pp."
parental generations	$P_1, P_2$	all uses (with subscripts)
parts per billion	ppb	with numerals only
parts per million	ppm	with numerals only
pascal	Pa	with numerals only
per	.	(raised period; do not use slant line)
percent	%	with numerals only
photosynthesis, net	Pn	2nd & subsequent uses
photosynthetically active radiation	PAR	2nd & subsequent uses
photosynthetic photon flux density	PPFD	2nd & subsequent uses
plant introduction	PI	all uses
plus	+	(spaces on both sides of symbol)
population coefficient of linear correlation	$\rho$	statistical reporting (lowercase Greek rho)
population variance	$\sigma^2$	statistical reporting (lowercase Greek sigma with superscript 2)
pound	lb	with numerals only (dual reporting, first reference is metric)
pounds per square inch	psi	with numerals only
pressure	P	SI symbol
probability	P	with numerals only (italic)
regression coefficient of a sample	b	statistical reporting (italic)
regression coefficient of the population	$\beta$	statistical reporting (lowercase Greek beta)

الكلمة أو الوحدة	الرمز أو الاختصار	الاستعمال المسموح به
relative humidity	RH	with numerals only
revised	rev.	book reviews; literature citations
revolution(s)	r	with numerals only
revolutions per minute	rpm	with numerals only
sample coefficient of linear correlation	r	statistical reporting (italic)
sample variance	s <sup>2</sup>	statistical reporting (superscript 2)
scanning electron microscopy	SEM	2nd & subsequent uses
second (angular)	"	with numerals only
second (time)	sec. s (with SI units)	with numerals; table column heads; not abbreviated in abstract
solution	soln	table column heads only
south	S	with numerals only
species	sp. spp. (plural)	formal nomenclature only (only after generic name)
square centimeter	cm <sup>2</sup>	with numerals only
square meter	m <sup>2</sup>	with numerals only
standard deviation of a sample	St)	all uses (small caps)
standard deviation of the population	$\sigma$	statistical reporting (lowercase Greek sigma)
standard error of the mean of a sample	SE	all uses (small caps)
Student's t statistic	t	statistical reporting (italic)
subspecies	ssp. spp. (plural)	formal nomenclature only (only after specific epithet)

الاستعمال المسموح به

الرمز أو الاختصار

الكلمة أو الوحدة

الكلمة أو الوحدة	الرمز أو الاختصار	الاستعمال المسموح به
Système International d'Unités	SI	2nd & subsequent uses
temperature (abbrev.)	temp	table column heads only
temperature (symbol)	T	symbol
thin-layer chromatography	TLC	2nd & subsequent uses
times	×	before numeral, no space (e.g., $\times 4$ ) ("math x")
tobacco mosaic virus	TMV	2nd & subsequent uses
transmission electron microscopy	TEM	2nd & subsequent uses
ultraviolet	UV	2nd & subsequent uses
Union of Soviet Socialist Republics	USSR	all uses
United States (modifier)	U.S.	all uses
United States (noun)	spell out	all uses; do not use "USA"
University	Univ.	all uses, except in bylines
U.S. Department of Agriculture	USDA	all uses, except in bylines
variance ratio	F	statistical reporting (in an analysis of variance)
variety, botanical	var.	formal nomenclature (only after a specific epithet); table column heads
versus	vs.	all uses
volt	V	with numerals only
volume (bibliographic)	Vol.	book reviews; literature citations
volume (mix ratio)	v/v	with numerals only (use slant line)
volume (space)	vol	table column heads only

volumetric water potential	$\rho_w$	symbol (lowercase Greek rho and subscript)
watt	W	with numerals only
week	wk	table column heads only
weight (mix ratio)	w/w	with numerals only (use slant line)
weight (unit)	wt	table column heads only
west	W	with numerals only
weetable powder	WP	2nd & subsequent uses, with percents
year	yr	table column heads only

A			
about ( <i>circa</i> )		amount	amt
absolute	ca.	ampere(s)	amp
absorbancy*	abs	ampere-hour	amp-hr
acetic acid, 2,4-dichloro -	A	and elsewhere ( <i>et alibi</i> )	et al.
phenoxy		and others ( <i>et alii</i> )	et al.
acre	2,4-D	and the rest ( <i>et cetera</i> )	etc.
adenosine diphosphate	<i>spell out</i>	Angstrom (unit)	A
[5(pyro-) diphosphate of		<i>anno Domini</i>	A.D.
adenosine]	ADP	<i>ante meridiem</i> (before noon)	AM
adenosine monophosphate		antilogarithm	antilog
(needed for contrast with 2',		aperture ratio 16	f/16
and 3'-phosphates = 2'-AMP,		approximate (as adj)	
3'-AMP)	AMP	(or use "about")	approx
adenosine triphosphatase		aqueous	aq
(enzyme)	<i>spell out</i>	are (100 m <sup>2</sup> )	<i>spell out</i>
adenosine triphosphate		as desired ( <i>ad libitum</i> )	ad lib.
[5(pyro-) triphosphate of		atmosphere(s)	atm
adenosine]	ATP	atomic weight	at. wt.
adenylic acid, <i>see</i>		atto (prefix, 10 <sup>-18</sup> )	a
adenosine monophosphate		audio-frequency (adj)	af
<i>ad libitum</i> (as desired)	ad lib.	average (abbreviate in equations	
adrenocorticotropin	ACTH	and tables only)	avg
afternoon ( <i>post meridiem</i> )	PM	avoirdupois	avdp
against ( <i>versus</i> )	vs.		
alternating-current (adj)	a-c	B	
altitude	alt	barrel(s)	bl
		basal metabolic rate	BMR

Baumé (with numeral, omit degree symbol)	Bé	coefficient	coef
before noon ( <i>ante meridiem</i> )	AM	coenzyme A	CoA
billion, <i>see giga</i>		coenzyme A and its acyl derivatives	Acyl-CoA
billion electron volts	Gev	compare ( <i>conferre</i> ) (avoid use of abbreviation if <i>see is</i> meant)	cf.
biochemical oxygen demand	BOD	concentrate	conc
body weight	body wt	concentrated	concd
boiling point	bp	concentration	concn
British antilewisite (2,3-dimercapto-1-propanol)	BAL	conductivity	cond
British thermal unit(s)	BTU	configuration*	D-, L-, DL-
bushel(s)	bu	constant	const
	c	corrected (of melting points)	cor
calorie(s) (small, gram-calorie)	cal	cosine	cos
Calorie(s) (large, kilogram calorie)	kcal	coulomb	coul
Celsius (with numeral, omit degree symbol)	C	counts per minute	count/min
cent	<i>spell out</i>	counts per second	count/sec
centi (prefix, $10^{-2}$ )	c	crossed with (genetics)	×
centigrade, <i>see Celsius</i>		cubic centimeter(s)	cm <sup>3</sup> , cc
centigram(s)	cg	cubic foot (feet)	ft <sup>3</sup>
centimeter(s)	cm	cubic kilometers	km <sup>3</sup>
centimeter, square	cm <sup>2</sup>	cubic meter(s)	m <sup>3</sup>
centimeter-gram-second (system)	cgs	cubic micron(s)	μ <sup>3</sup>
central nervous system	CNS	cubic millimeter(s)	mm <sup>3</sup>
chemically pure	cp	cubic yard(s)	yd <sup>3</sup>
<i>circa</i> (about)	ca.	curie ( $3.7 \times 10^{10}$ disintegration/sec)	c
		cycles per minute	cycle/min
		cycles per second	cycle/sec

	<b>D</b>		disintegration per minute	dpm
day	<i>spell out</i>		disintegration per second	dps
DDT, <i>see</i> ethane			dissociation constant, negative	
deci (prefix, $10^{-1}$ )	d		log of	pK'
decibel	db		dollar	<i>spell out</i>
decigram (0.1 g)	dg		or \$ with numerals	
decimeter (0.1 m)	dm		dozen	doz
decompose (melting point)	decomp, dec		dram	dr
degree, Celsius (omit degree symbol)			dry weight	dry wt
degree, Fahrenheit (omit degree symbol)		<b>E</b>		
degree, Kelvin (omit degree symbol)		<b>C</b>	east	E
degree (space)	deg or °		effective dose, median	ED <sub>50</sub>
degrees of freedom (statistics)	df (in tables)	<b>F</b>	electrocardiogram	ECG
deka (prefix, 10)	dk		electrode potential	E
density (as $d_{13}$ : specific gravity at 13 C referred to water at 4 C; $d_{20}^{20}$ at 20 C referred to water at same temperature)	d	<b>K</b>	electrode potential, standard	E <sub>0</sub>
deoxyribonuclease	<i>spell out</i>		electrode potential, standard at constant pH	E' <sub>0</sub>
deoxyribonucleic acid	DNA		electroencephalogram	EEG
dextrorotatory ( <i>see</i> configuration)	<i>d-, dextro-, (+)</i>		electromotive force	emf
diameter	diam		electromyogram	EMG
2,4-dichlorophenoxyacetic acid	2,4-D		electron paramagnetic resonance	EPR
diffusion coefficient (usually given in cm <sup>2</sup> /sec)	D, D <sub>20, w</sub>		electron volt(s)	ev
diphosphopyridine nucleotide, <i>see</i> nicotinamide			erg	<i>spell out</i>
direct current (adj)	d-c		<i>et alibi</i> (and elsewhere);	
			<i>et alii</i> (and others)	et al.
			<i>et cetera</i> (and the rest)	etc.
			ethane, 1,1,1-trichloro-2,2-bis( <i>p</i> -chlorophenyl)-	DDT
			ethylenediaminetetraacetate	EDTA
			( <i>not</i> Versene)	
			<i>exempli gratia</i> (for example)	e.g.
			extinction (log I <sub>0</sub> /I)	E
		<b>F</b>		
			Fahrenheit (with numeral, omit degree symbol)	F

farad	<i>spell out</i>	H	
female	♀		
femto (prefix, $10^{-15}$ )	f	hecto (prefix, $10^2$ )	h
figure(s) (illustration)	Fig.	hectometer (100 m)	hm
filial generations (genetics)	F <sub>1</sub> , F <sub>2</sub> , F <sub>3</sub> , etc.	hemoglobin ( <i>thus</i> , HbO <sub>2</sub> , oxygenated hemoglobin)	Hb
flavin adenine dinucleotide	FAD	horsepower	hp
and its reduced form	FADH <sub>2</sub>	hour(s)	hr
flavin mononucleotide	FMN	hundredweight	cwt
and its reduced form	FMNH <sub>2</sub>	hydrogen ion concentration,	
focal length	f/	negative log of;	pH
foot <i>or</i> feet	ft	<i>plural</i>	pH values
foot candle	ft-c		
for example ( <i>exempli gratia</i> )	e.g.	I	
forenoon	AM		
forma (taxonomy only)	f.	<i>ibidem</i> (in the same place)	ibid.
freezing point	fp	<i>id est</i> (that is)	i.e.
frequency modulation	FM	inch(es)	<i>spell out</i>
fusion point ( <i>see mp</i> )	fup	infective dose, median (infect 50% of inoculated group)	ID <sub>50</sub>
		infrared	IR (in tables)
	G	international unit	IU
gallon(s)	gal	intracutaneous	ic
gamma ( <i>see microgram</i> )		intramuscular, intramuscularly	in
generations, filial (genetics)	F <sub>1</sub> , F <sub>2</sub> , F <sub>3</sub> , etc.	intra-peritoneal, intra-peritoneally	ip
genus, new	gen. n.	intravenous, intravenously	
giga (prefix, $10^9$ )	G	(do not confuse with Roman IV)	iv
glutathione, oxidized	GSSG		
glutathione, reduced	GSH		
grain(s)	gr		K
gram(s)	g	Kelvin (scale in which zero is -273.1 C) (with numeral, omit degree symbol)	K
gram calorie	cal		
gram molecule ( <i>or mole</i> )	g mole ( <i>or mole</i> )	kilo (prefix, $10^3$ )	k
gravity, centrifugal	g	kilocalorie(s)	kcal

kilocycle(s)	kc	meter(s), cubic	m <sup>3</sup>
kilocycles per second	kc/sec	meter(s), square	m <sup>2</sup>
kiloelectron volt	keV	methemoglobin	MetHb
kilogram(s)	kg	mho (reciprocal ohm)	<i>spell out</i>
kiloliter(s)	kliter	micro (prefix, 10 <sup>-6</sup> )	μ
kilometer(s)	km	microcurie(s)	μc
kiloröntgen(s)	kr	microfarad	μf
kilovolt(s)	kv	microgram (do not use	
kilowatt(s)	kw	gamma, γ)	μg
		microliter (do not use	
		lambda, λ)	μliter
		micromicron (10 <sup>-9</sup> mm)	μμ or pm
		micromolar (unit of concn)	μM
		micromole (unit of mass)	μmole
		micron(s) (10 <sup>-3</sup> mm)	μ
		microvolt	μv
		microwatt	μw
		mile(s)	<i>spell out</i>
		miles per hour	mph
		milli (prefix, 10 <sup>-3</sup> )	m
		milliampere(s)	ma
		millicurie(s)	mc
		milliequivalent(s)	meq, mEq
		milligram(s)	mg
		milligrams per cent (mg%,	
		<i>never use, see p. 33)</i>	
		milliliter(s)	ml
		millimeter(s)	mm
		millimeter(s), square	mm <sup>2</sup>
		millimicrogram	mμg or ng
		millimicron (10 <sup>-6</sup> mm)	mμ
		millimolar (unit of concn)	mM
		millimole (unit of mass)	mmole
		million electron volts	Mev
		milliosmols	<i>spell out</i>
		millivolt(s)	mv
		millivolt-second	mv-sec
		minimum or minute(s)	min
<b>L</b>			
lambda, <i>see</i> microliter			
Lambert	L		
latitude	lat		
lethal dose, median (lethal			
for 50% of inoculated			
group)	LD <sub>50</sub>		
levorotatory ( <i>see also</i>			
configuration)	l-, levo-, (-)-		
liter(s)	<i>spell out</i>		
<i>loco citato</i> (in the place			
cited), <i>avoid use</i>	loc. cit.		
logarithm (common, base			
10) <i>in formulas</i>	log, log <sub>10</sub>		
logarithm (natural base			
e) <i>in formulas</i>	ln, log <sub>e</sub>		
longitude	long		
<b>M</b>			
magnified by	X		
male	♂		
maximum	max		
mega (prefix 10 <sup>6</sup> )	M		
melting point	mp		
metabolic rate	MR		
meter(s)	m		

minimum lethal dose (do not use for lethal dose, median)	MLD	noon ( <i>meridianus</i> )	M
minute(s) or minimum	min	normal (concn, 0.1 N)	N
minute (angular measure)	'	normal (in trivial names of organic compounds)	n-
molar (mole per liter)	M	normal temperature and pressure	NTP
mole (a gram molecule)	mole	north, northwest	N, NW
molecular extinction coefficient ( $\epsilon = AM/bc$ where $A$ is absorbancy, $M$ is molecular weight, $b$ is cell length in centimeters, and $c$ the concentration in grams per liter)	$\epsilon$	nuclear magnetic resonance	n.m.r.
molecular weight	mol wt	number ( <i>numero</i> ) in enumeration	no.
month	<i>spell out</i>	numerical aperture (in microscopy)	NA
morning ( <i>ante meridiem</i> )	AM		
myria (prefix, $10^4$ )	my	ohm	<i>spell out</i>
	N	<i>opere citato</i> (in the work cited), <i>avoid use</i>	op. cit.
nano (prefix, $10^{-9}$ )	n	optical density	OD
new genus	gen. n.	optical rotation	
new species	sp. n.	Specific optical rotation (with concn %, w/v), thus, $[\alpha]^{20}_D$ , $[\alpha]^{25}_{6461}$ , etc.	
nicotinamide mononucleotide	NMN	Molecular optical rotation ( $=[\alpha] \times \text{mol wt}/10$ ), thus, $[M]^{20}_D$ , $[M]^{25}_{6461}$ , etc.	
nicotinamide adenine dinucleotide	NAD or NAD <sup>+</sup> (formerly DPN, CoI)	optimal (adj), optimum (noun)	opt
nicotinamide adenine dinucleotide, reduced form	NADH	osmol	<i>spell out</i>
nicotinamide adenine dinucleotide phosphate	NADP or NADP <sup>+</sup> (formerly TPN, CoII)	ounce	oz
nicotinamide adenine dinucleotide phosphate, reduced form	NADPH	oxyhemoglobin	HbO <sub>2</sub>
nonprotein nitrogen	NPN		
		page(s)	P-
		paralysis, median	PD <sub>50</sub>
		parts per million	ppm
		per cent	%

per thousand, per mil	‰	revolutions per minute	rpm,
pico (prefix, $10^{-12}$ )	p	(use g where possible)	rev/min
<i>post meridiem</i> (afternoon)	PM	ribonuclease (enzyme)	<i>spell out</i>
precipitate (in tables)	ppt	ribonucleic acid	RNA
preparation (in tables)	prepn	röntgen (unit of exposure	
probability (that an event		dose of X- or $\gamma$ -radiation)	r
is due to chance alone)	P	röntgen equivalent man	
pounds(s) ( <i>libra</i> )	lb.	(rad $\times$ RBE = rem)	rem
pounds per square			
inch	lb/in <sup>2</sup> , psi		
	Q		S
qualitative	qual	salinity (per thousand,	
	(in tables)	per mil)	‰
quantitative	quant	second(s) (time)	sec
	(in tables)	second(s) (angular measure)	"
		sedimentation coefficient	
		corrected to 20 C in water.	
		(S <sub>20</sub> may be used if not	
		ambiguous)	S <sub>20, w</sub>
radiation, ionizing, absorbed		<i>see</i> (do not use cf.)	<i>spell out</i>
dose (100 ergs/g of irradiated		sine	sin
material). Use in place of		south, southwest	S, SW
(rep) röntgen equivalent		species (taxonomy only)	sp.
physical	rad	species, new	sp. n.
radiation, relative biological		specific gravity	sp gr
effectiveness (one type of		spectrophotometric units, <i>see</i>	
radiation compared to an-		absorbancy and molecular	
other)	RBE	extinction coefficient	
radio-frequency	rf	square	sq
red blood cells	RBC	square centimeter	cm <sup>2</sup>
refractive index (at stated		square foot	ft <sup>2</sup>
temperature and wavelength,		square meter	m <sup>2</sup>
thus, [n] <sup>20<sub>D</sub></sup> for 20 C and		square millimeter	mm <sup>2</sup>
sodium light)	n	standard deviation	SD
relative humidity	<i>spell out</i>	standard error	SE
respiratory quotient	RQ	sulfhydryl or thiol group	SH-
reticuloendothelial system	RES		

	<b>T</b>	viscosity (symbol, eta)	$\eta$
tangent	<b>tan</b>	volt	v
temperature	<b>temp</b>	volume (with	
tera (prefix, $10^{12}$ )	<b>T</b>	numeral in tables)	vol
that is ( <i>id est</i> )	i.e.	volume/volume (concn)	v/v
ton	<i>spell out</i>		
	(or T with numerals)	<b>w</b>	
trichloroacetic acid (TCA		watt	w
is not acceptable)	<i>spell out</i>	wavelength (symbol, lambda)	$\lambda$
1,1,1, trichloro-2,2-di-		week(s)	<i>spell out</i>
(p-chlorophenyl)-ethane	<b>DDT</b>		(or wk with
triphosphopyridine nucleotide,			numeral in table)
see nicotinamide		weight	wt
tris buffer (give chemical name		weight/volume (concn)	w/v
when first mentioned) [tris			(specify units
(hydroxymethyl) amino		west	W
methane or 2-amino-2-			
(hydroxymethyl)-1,3-	<b>Tris</b>		
propanediol]		<b>x</b>	
		X-irradiation	
	<b>U</b>	X-ray (adj and noun)	
ultraviolet (with			
numeral in tables)	<b>UV</b>		
uncorrected (of melting		<b>y</b>	
points)	<b>unc</b>	yard(s)	<i>spell out</i>
			(or yd with
	<b>v</b>		numeral in tables)
variety(ies) (in taxonomy		year(s)	<i>spell out</i>
only)	<b>var.</b>		(or yr with
versus (against)	<b>vs.</b>		numeral in tables)

٤ . قائمة الرموز والاختصارات التي يقرأها الـ U. S. Government Printing Office

( ١٩٨٤ )

( ١ ) اختصارات الكلمات العادية

- AA, Alcoholics Anonymous  
A.B. or B.A., bachelor of arts  
abbr., abbreviation  
abs., abstract  
acct., account  
ACDA, Arms Control and Disarmament Agency  
ACTH, adrenocorticotrop hormone  
ACTION (not an acronym, an independent agency)  
A.D. (anno Domini), in the year of our Lord  
ADP, automated data processing  
AEF, American Expeditionary Forces  
AF, audiofrequency  
AFB, and similar military symbols (with name), Air Force Base  
AFL-CIO, American Federation of Labor and Congress of Industrial Organizations  
AID, Agency for International Development  
a.k.a., also known as  
A.L.R., American Law Reports  
AM (no periods), amplitude modulation  
A.M. (anno mundi), in the year of the world  
A.M. or M.A., master of arts  
a.m. (ante meridiem), before noon  
Am. Repts., American Reports  
AMVETS, American Veterans of World War II; Amvet(s) (individual)  
antilog (no period), antilogarithm  
A1 (rating)  
AOA, Administration on Aging  
API, American Petroleum Institute  
APO (no periods), Army post office  
App. D.C., District of Columbia Appeal Cases  
App. Div., Appellate Division  
APPR, Army package power reactor  
approx., approximately  
ARC, American Red Cross  
ARS, Agricultural Research Service  
ASCS, Agricultural Stabilization and Conservation Service  
ASME, American Society of Mechanical Engineers  
A.S.N., Army service number  
ASTM, American Society for Testing Materials  
Atl., Atlantic Reporter; A.2d, Atlantic Reporter, second series  
AUS, Army of the United States  
Ave., avenue  
AWACS, airborne warning and control system  
a.w.l., absent with leave  
a.w.o.l., absent without official leave  
B.C., before Christ  
BCG (bacillus Calmette-Guérin), antituberculosis vaccine  
bf, boldface  
BGN, Board on (not of) Geographic Names  
BIA, Bureau of Indian Affairs  
BIS, Bank for International Settlements  
Blatch. Pr. Cas., Blatchford's Prize Cases  
Bldg., building  
B.Lit(t). or Litt(t).B., bachelor of literature  
BLM, Bureau of Land Management  
BLS, Bureau of Labor Statistics  
Blvd., boulevard  
b.o., buyer's option  
B.S. or B.Sc., bachelor of science  
ca. (circa), about  
ca, centiare  
CAB, Civil Aeronautics Board  
CACM, Central American Common Market  
c. and s.c., caps and small caps  
CAP, Civil Air Patrol  
CARE, Cooperative for American Remittances to Everywhere, Inc.  
c.b.d., cash before delivery  
C.C.A., Circuit Court of Appeals  
CCC, Commodity Credit Corporation  
C.Cls., Court of Claims  
C.Cls.R., Court of Claims Reports  
C.C.P.A., Court of Customs and Patents Appeals  
CCR, Commission on Civil Rights  
CDC, Centers for Disease Control  
CEA, Council of Economic Advisers  
Cento, Central Treaty Organization  
cf. (confer), compare, or see

- CFR, Code of Federal Regulations  
 CFR Supp., Code of Federal Regulations Supplement  
 CHAMPUS, Civilian Health and Medical Program of the Uniformed Services  
 CIA, Central Intelligence Agency  
 CIC, Counterintelligence Corps  
 C.J. (corpus juris), body of law; Chief Justice  
 CLC, Cost of Living Council  
 CO, commanding officer  
 Co., company (commercial)  
 c.o.d., cash on delivery  
 COLA, cost-of-living adjustment  
 Comp. Dec., Comptroller's Decisions (Treasury)  
 Comp. Gen., Comptroller General Decisions  
 Comsat, communication satellite con., continued  
 conelrad, control of electromagnetic radiation (civil defense)  
 Conrail, Consolidated Rail Corporation  
 Conus, continental United States Corp., corporation (commercial)  
 cos (no period), cosine  
 cosh (no period), hyperbolic cosine  
 cot (no period), cotangent  
 coth (no period), hyperbolic cotangent  
 c.p., chemically pure  
 C.P.A., certified public accountant  
 CPI, Consumer Price Index  
 CPR, cardiopulmonary resuscitation  
 cr., credit; creditor  
 csc (no period), cosecant  
 csch (no period), hyperbolic cosecant  
 Ct., court  
 Dall., Dallas (U.S. Supreme Court Reports)  
 DAR, Daughters of the American Revolution  
 DAR, defense acquisition regulation  
 d.b.a., doing business as  
 d.b.h., diameter at breast height  
 D.D., doctor of divinity  
 D.D.S., doctor of dental surgery  
 DDT, dichlorodiphenyltrichloroethane  
 DEW, distant early warning (DEW line)  
 Dist. Ct., District Court  
 D.Lit(t) or Lit(t).D., doctor of literature  
 do. (ditto), the same  
 DNC, Domestic Names Committee (BGN)  
 DOD, Department of Defense  
 DOT, Department of Transportation  
 DP (no periods), displaced person  
 D.P.H., doctor of public health  
 D.P.Hy., doctor of public hygiene  
 dr., debit; debtor  
 Dr., doctor; drive  
 D.V.M., doctor of veterinary medicine  
 E., east  
 EEC, European Economic Community (Common Market)  
 EEOC, Equal Employment Opportunity Commission  
 EFTA, European Free Trade Association  
 EFTS, electronic funds transfer system  
 e.g. (exempli gratia), for example  
 EHF, extremely high frequency  
 8°, octavo  
 emcee, master of ceremony  
 e.o.m., end of month  
 EOP, Executive Office of the President  
 EPA, Environmental Protection Agency  
 ERP, European Recovery Program  
 et al. (et alii), and others  
 et seq. (et sequentia), and the following  
 etc. (et cetera), and so forth  
 Euratom, European Atomic Energy Community  
 Eurodollars, U.S. dollars used to finance foreign trade  
 Euromarket, European Common Market (European Economic Community)  
 Ex. Doc. (with letter), executive document  
 f., ff., and following page (pages)  
 FAA, Federal Aviation Administration  
 FAO, Food and Agriculture Organization  
 f.a.s., free alongside ship  
 FAS, Foreign Agricultural Service  
 FBI, Federal Bureau of Investigation  
 FCA, Farm Credit Administration  
 FCC, Federal Communications Commission  
 FCIC, Federal Crop Insurance Corporation  
 FCSC, Foreign Claims Settlement Commission  
 FDA, Food and Drug Administration  
 FDIC, Federal Deposit Insurance Corporation  
 Fed., Federal Reporter; F.2d, Federal Reporter, second series  
 FEOF, Foreign Exchange Operations Fund  
 FHA, Federal Housing Administration  
 FmHA, Farmers Home Administration  
 FHLBB, Federal Home Loan Bank Board  
 FHWA, Federal Highway Administration  
 FICA, Federal Insurance Contributions Act  
 FIPS, Federal Information Processing Standards  
 FLSA, Fair Labor Standards Act  
 FM, frequency modulation  
 FMC, Federal Maritime Commission  
 FMCS, Federal Mediation and Conciliation Service  
 FNMA, Federal National Mortgage Association (Fannie Mae)  
 FNS, Food and Nutrition Service  
 f., folio  
 f.o.b., free on board  
 4°, quarto  
 FPC, Federal Power Commission  
 FPO (no periods), fleet post office  
 FR, Federal Register (publication)  
 FRG, Federal Republic of Germany  
 FRS, Federal Reserve System

- FS, Forest Service  
 FSLIC, Federal Savings and Loan Insurance Corporation  
 FSS, Federal Supply Service  
 F.Supp., Federal Supplement  
 FTC, Federal Trade Commission  
 FWS, Fish and Wildlife Service  
 GAO, General Accounting Office  
 GATT, General Agreement of Tariffs and Trade  
 GDR, German Democratic Republic  
 GI, general issue; Government issue  
 G.M.&S., general, medical, and surgical  
 GNMA, Government National Mortgage Association (Ginnie Mae)  
 GNP, gross national product  
 Gov., governor  
 GPO, Government Printing Office  
 gr. wt., gross weight  
 GS, Geological Survey  
 GSA, General Services Administration  
 H.C., House of Commons  
 H. Con. Res. (with number), House concurrent resolution  
 H. Doc. (with number), House document  
 HE (no periods), high explosive  
 HF (no periods), high frequency  
 HHS, Health and Human Resources (Department of)  
 H.J. Res. (with number), House joint resolution  
 H.L., House of Lords  
 How., Howard (U.S. Supreme Court Reports)  
 H.R. (with number), House bill  
 H. Rept. (with number), House report  
 H. Res. (with number), House resolution  
 HUD, Housing and Urban Development  
 IADB, Inter-American Defense Board  
 IAEA, International Atomic Energy Agency  
 ibid. (ibidem), in the same place  
 ICBM, intercontinental ballistic missile  
 ICC, Interstate Commerce Commission  
 id. (idem), the same  
 IDA, International Development Association  
 i.e. (id est), that is  
 IF (no periods), intermediate frequency  
 IFC, International Finance Corporation  
 IMCO, Intergovernmental Maritime Consultative Organization  
 IMF, International Monetary Fund Inc., incorporated  
 INS, Immigration and Naturalization Service  
 Insp. Gen., Inspector General  
 Interpol, International Criminal Police Organization  
 IOU, I owe you  
 IQ, intelligence quotient  
 IRBM, intermediate range ballistic missile  
 IRE, Institute of Radio Engineers  
 IRO, International Refugee Organization  
 IRS, Internal Revenue Service  
 ITO, International Trade Organization  
 ITU, International Telecommunication Union; International Typographical Union  
 JAG, Judge Advocate General  
 jato, jet-assisted takeoff  
 J.D. (jurum doctor), doctor of laws  
 JOBS, Job Opportunities in the Business Sector  
 Jr., junior  
 Judge Adv. Gen., Judge Advocate General  
 LAFTA, Latin American Free Trade Association  
 lat., latitude  
 LC, Library of Congress  
 lc., lowercase  
 L.Ed., Lawyer's edition (U.S. Supreme Court Reports)  
 liq., liquid  
 lf., lightface  
 LF, low frequency  
 LL.B., bachelor of laws  
 LL.D., doctor of laws  
 loc. cit. (loco citato), in the place cited  
 log (no period), logarithm  
 long., longitude  
 loran (no periods), long-range navigation  
 lox (no periods), liquid oxygen  
 LPG, liquefied petroleum gas  
 Ltd., limited  
 Lt. Gov., lieutenant governor  
 M, money supply:  
     M<sub>1</sub>; M<sub>1B</sub>; M<sub>2</sub>  
 M., monsieur; MM., messieurs  
 m. (meridies), noon  
 M, more  
 MA (see MarAd)  
 MAC, Military Airlift Command  
 MAG, Military Advisory Group  
 MarAd, Maritime Administration  
 MC, Member of Congress (emcee, master of ceremonies)  
 M.D., doctor of medicine  
 MDAP, Mutual Defense Assistance Program  
 MediCal, Medicaid California  
 memo, memorandum  
 MF, medium frequency  
 MFN, most favored nation  
 MIA, missing in action (plural, MIA's)  
 Misc. Doc. (with number), miscellaneous document  
 Mlle., mademoiselle  
 Mme., madam  
 Mmes., mesdames  
 mo., month  
 MOS, military occupational specialty  
 M.P., Member of Parliament  
 MP, military police  
 Mr., mister (plural, Messrs.)  
 Mrs., mistress  
 Ms., coined feminine title (plural, Mses.)  
 M.S., master of science  
 MS., MSS., manuscript, manuscripts  
 MSC, Military Sealift Command  
 Msgr., Monsignor  
 m.s.l., mean sea level

MTN, multilateral trade negotiations	Passed Asst. Surg., passed assistant surgeon
N., north	PBS, Public Building Service
NA., not available; not applicable	Pet., Peters (U.S. Supreme Court Reports)
NAC., National Association of Counties	Ph, phenyl
NAS, National Academy of Science	Phar.D., doctor of pharmacy
NASA, National Aeronautics and Space Administration	Ph.B. or B.Ph, bachelor of philosophy
NATO, North Atlantic Treaty Organization	Ph.D., or D.Ph., doctor of philosophy
NBS, National Bureau of Standards	Ph.G., graduate in pharmacy
NCUA, National Credit Union Administration	PHS, Public Health Service
NE., northeast	PIN, personal identification number
n.e.c., not elsewhere classified	Pl., place
n.e.s., not elsewhere specified	p.m. (post meridiem), afternoon
net wt., net weight	P.O. Box (with number); <i>but</i> post office box (in general sense)
N.F., National Formulary	POW, prisoner of war (plural, POW's)
NFAH, National Foundation on the Arts and the Humanities	Private Res. (with number), private resolution
NIH, National Institutes of Health	Prof., professor
n.l., natural log or logarithm	pro tem (pro tempore), temporarily
NLRB, National Labor Relations Board	P.S. (post scriptum), postscript; public school (with number)
No., Nos., number, numbers	PTA, parent-teachers' association
NOAA, National Oceanic and Atmospheric Administration	Public Res. (with number), public resolution
n.o.i.b.n., not otherwise indexed by name	PX, post exchange
n.o.p., not otherwise provided (for)	QT, on the quiet
n.o.s., not otherwise specified	racon, radar beacon
NOS, National Ocean Service (formerly National Ocean Survey)	radar, radio detection and ranging
NOVS, National Office of Vital Statistics	RAM, random access memory
NPS, National Park Service	Rand Corp. (research and development)
NRC, Nuclear Regulatory Commission	R&D, research and development
NS, nuclear ship	rato, rocket-assisted takeoff
NSA, National Shipping Authority	Rd., road
NSC, National Security Council	RDT&E, research, development, testing, and evaluation
NSF, National Science Foundation	REA, Rural Electrification Administration
n.s.k., not specified by kind	Rev., reverend
n.s.p.f., not specifically provided for	Rev. Stat., Revised Statutes
NW., northwest	RF, radiofrequency
OAS, Organization of American States	R.F.D., rural free delivery
OASDHI, Old-Age, Survivors, Disability, and Health Insurance Program	Rh, Rhesus (blood factor)
OASI, Old-Age and Survivors Insurance	RIF, reduction(s) in force; RIF'd, RIF'ing, RIF's
OCD, Office of Civil Defense	R.N., registered nurse
OD, officer of the day	ROTC, Reserve Officers' Training Corps
OD, overdose; OD'd, overdosed	RR, railroad
O.D., doctor of optometry	RRB, Railroad Retirement Board
OECD, Organization for Economic Cooperation and Development	Rt. Rev., right reverend
OK, OK'd OK'ing, OK's	Ry., railway
OMB, Office of Management and Budget	S, south; Senate bill (with number)
Op. Atty. Gen., Opinions of the Attorney General	SAC, Strategic Air Command
op. cit. (opere citato), in the work cited	SAE, Society of Automotive Engineers
OPEC, Organization of Petroleum Exporting Countries	S&L's, savings and loan(s)
OSD, Office of the Secretary of Defense	SALT, strategic arms limitation talks
OTC, Organization for Trade Cooperation	SAR, Sons of the American Revolution
PA, public address system	SBA, Small Business Administration
Pac., Pacific Reporter; P.2d, Pacific Reporter, second series	sc. (scilicet), namely (see also <i>sc</i> )
PAC, political action committee (plural, PAC's)	s.c., small caps
	S. Con. Res. (with number), Senate concurrent resolution
	s.d. (sine die), without date
	S. Doc. (with number), Senate document
	SE., southeast

- SEATO, Southeast Asia Treaty Organization  
 SEC, Securities and Exchange Commission  
 sec, secant  
 sech, hyperbolic secant  
 2d, 3d, second, third  
 SHF, superhigh frequency  
 shoran, short range (radio)  
 SI, Systeme International d' Unités  
 sic, thus  
 sin, sine  
 sinn, hyperbolic sine  
 S.J. Res. (with number), Senate joint resolution  
 sonar (no period), sound, navigation, and ranging  
 SOP, standard operating procedure  
 SOS, wireless distress signal  
 SP, shore patrol  
 SPAR, Coast Guard Women's Reserve (semper paratus—always ready)  
 sp. gr., specific gravity  
 Sq., square (street)  
 Sr., senior  
 S. Rept. (with number), Senate report  
 S. Res. (with number), Senate resolution  
 SS, steamship  
 ss (scilicet), namely (in law) (see also sc.)  
 SSA, Social Security Administration  
 SSS, Selective Service System  
 St., Ste., SS., Saint, Sainte, Saints  
 St., street  
 Stat., Statutes at Large  
 STP, standard temperature and pressure  
 Sup. Ct., Supreme Court Reporter  
 Supp. Rev. Stat., Supplement to the Revised Statutes  
 Supt., superintendent  
 Surg., surgeon  
 Surg. Gen., Surgeon General  
 SW., southwest  
 S.W.2d, Southwestern Reporter, second series  
 SWAT, special weapons and tactics (team)  
 T., Tps., township, townships  
 tan, tangent  
 tann, hyperbolic tangent  
 TB, tuberculosis  
 T.D., Treasury Decisions  
 Ter., terrace  
 t.m., true mean  
 TNT, trinitrotoluol  
 TV, television  
 TVA, Tennessee Valley Authority  
 2,4-D (insecticide)  
 uc., uppercase  
 UHF, ultrahigh frequency  
 UMTA, Urban Mass Transportation Administration  
 U.N., United Nations  
 Unesco, United Nations Educational, Scientific, and Cultural Organization (copyrighted form)  
 UNICEF, United Nations Children's Fund  
 U.S., U.S. Supreme Court Reports  
 U.S.A., United States of America  
 USA, U.S. Army  
 USAF, U.S. Air Force  
 U.S.C., United States Code  
 U.S.C.A., United States Code Annotated  
 U.S.C. Supp., United States Code Supplement  
 USCG, U.S. Coast Guard  
 USDA, U.S. Department of Agriculture  
 USES, U.S. Employment Service  
 U.S. 40, U.S. No. 40, U.S. Highway No. 40  
 USIA, U.S. Information Agency  
 USMC, U.S. Marine Corps  
 USN, U.S. Navy  
 USNR, U.S. Naval Reserve  
 U.S.P., United States Pharmacopeia  
 USPS, U.S. Postal Service  
 U.S.S., U.S. Senate; U.S. ship  
 U.S.S.R., Union of Soviet Socialist Republics  
 v. or vs. (versus), against  
 VA, Veterans' Administration  
 VAT, value added tax  
 VCR, video cassette recorder  
 VHF, very high frequency  
 VIP, very important person  
 viz (videlicet), namely  
 VLF, very low frequency  
 VTR, video tape recording  
 W., west  
 WAC, Women's Army Corps; a Wac  
 w.a.e., when actually employed  
 WAF, Women in the Air Force a Waf  
 Wall., Wallace (U.S. Supreme Court Reports)  
 WAVES, women accepted for volunteer emergency service; a Wave  
 wf, wrong font  
 Wheat., Wheaton (U.S. Supreme Court Reports)  
 WHO, World Health Organization  
 WMAL, WRC, etc., radio stations  
 w.o.p., without pay  
 Yale L.J., Yale Law Journal  
 ZIP Code, Zone Improvement Plan Code (Postal Service)  
 ZIP + 4, 9-digit ZIP Code

(ب) رموز وحدات القياس

- A, ampere  
 Å, angstrom  
 a, are  
 a, atto (prefix, one-quintillionth)

- aA, attoampere  
 abs, absolute (temperature and gravity)  
 ac, alternating current  
 AF, audiofrequency

Ah, ampere-hour	dm, decimeter
A/m, ampere per meter	dm <sup>2</sup> , square decimeter
AM, amplitude modulation	dm <sup>3</sup> , cubic decimeter
asb, apostilb	dol, dollar
At, ampere-turn	doz, dozen
at, atmosphere, technical	dr, dram
atm, atmosphere (infrequently, As)	dwt, deadweight tons
at wt, atomic weight	dwt, pennyweight
au, astronomical units	dyn, dyne
avdp, avoirdupois	EHF, extremely high frequency
b, barn	emf, electromotive force
B, bel	emu, electromagnetic unit
b, bit	erg, erg
bbl, barrel	esu, electrostatic unit
bbl/d, barrel per day	eV, electronvolt
Bd, baud	*F, degree Fahrenheit
bd. ft., board foot (obsolete); use fbm	F, farad
Bé, Baumé	f, femto (prefix, one-quadrillionth)
Bev (obsolete); see GeV	F, fermi (obsolete); use fm, femtometer
Bhn, Brinell hardness number	fbm, board foot; board foot measure
bhp, brake horsepower	fc, footcandle
bm, board measure	fl, footlambert
bp, boiling point	fm, femtometer
Btu, British thermal unit	FM, frequency modulation
bu, bushel	ft, foot
c, ¢, ct; cent(s)	ft <sup>2</sup> , square foot
c, centi (prefix, one-hundredth)	ft <sup>3</sup> , cubic foot
C, coulomb	ftH <sub>2</sub> O, conventional foot of water
c, cycle (radio)	ft·lb, foot-pound
*C, degree Celsius	ft·lbf, foot pound-force
cal, calorie (also: cal <sub>IT</sub> , International Table; cal <sub>th</sub> , thermochemical)	ft/min, foot per minute
cc. (obsolete), use cm <sup>3</sup>	ft <sup>2</sup> /min, square foot per minute
cd, candela (candle obsolete)	ft <sup>3</sup> /min, cubic foot per minute
cd/in <sup>2</sup> , candela per square inch	ft·pdl, foot poundal
cd/m <sup>2</sup> , candela per square meter	ft/s, foot per second
c.f.m. (obsolete), use ft <sup>3</sup> /min	ft <sup>2</sup> /s, square foot per second
c.f.s. (obsolete), use ft <sup>3</sup> /s	ft <sup>3</sup> /s, cubic foot per second
cg, centigram	ft/s <sup>2</sup> , foot per second squared
c·h, candela-hour	ft/s <sup>3</sup> , foot per second cubed
Ci, curie	G, gauss
cL, centiliter	G, giga (prefix, 1 billion)
cm, centimeter	g, gram; acceleration of gravity
c/m, cycles per minute	Gal, gal cm/s <sup>2</sup>
cm <sup>2</sup> , square centimeter	gal, gallon
cm <sup>3</sup> , cubic centimeter	gal/min, gallons per minute
cmil, circular mil	gal/s, gallons per second
cp, candlepower	Gb, gilbert
cP, centipoise	g/cm <sup>3</sup> , gram per cubic centimeter
cSt, centistokes	GeV, gigaelectronvolt
cu ft (obsolete) use ft <sup>3</sup>	GHz, gigahertz (gigacycle per second)
cu in (obsolete) use in <sup>3</sup>	gr, grain; gross
cwt, hundredweight	h, hecto (prefix, 100)
D, darcy	H, henry
d, day	h, hour
d, deci (prefix, one-tenth)	ha, hectare
d, pence	HF, high frequency
da, deka (prefix, 10)	hg, hectogram
dag, dekagram	hL, hectoliter
daL, dekaliter	hm, hectometer
dam, dekameter	hm <sup>2</sup> , square hectometer
dam <sup>2</sup> , square dekameter	hm <sup>3</sup> , cubic hectometer
dam <sup>3</sup> , cubic dekameter	hp, horsepower
dB, decibel	hph, horsepower-hour
dBu, decibel unit	Hz, hertz (cycles per second)
dc, direct current	id, inside diameter
dg, decigram	ihp, indicated horsepower
dL, deciliter	in, inci

- $\text{in}^2$ , square inch  
 $\text{in}^3$ , cubic inch  
 $\text{in/h}$ , inch per hour  
 $\text{inH}_2\text{O}$ , conventional inch of water  
 $\text{inHg}$ , conventional inch of mercury  
 $\text{in-lb}$ , inch-pound  
 $\text{in/s}$ , inch per second  
**J**, joule  
**J/K**, joule per kelvin  
**K**, kayser  
**K**, kelvin (degree symbol improper)  
**k**, kilo (prefix, 1,000)  
**k**, thousand ( $7k = 7,000$ )  
**kc**, kilocycle; see also **kHz** (kilohertz), kilocycles per second  
**kcal**, kilocalory  
**keV**, kiloelectronvolt  
**kG**, kilogauss  
**kg**, kilogram  
**kgf**, kilogram-force  
**kHz**, kilohertz (kilocycles per second)  
**kL**, kiloliter  
**klbf**, kilopound-force  
**km**, kilometer  
 $\text{km}^2$ , square kilometer  
 $\text{km}^3$ , cubic kilometer  
 $\text{km/h}$ , kilometer per hour  
**kn**, knot (speed)  
**k $\Omega$** , kilohm  
**kt**, kiloton; carat  
**kV**, kilovolt  
**kVA**, kilovoltampere  
**kvar**, kilovar  
**kW**, kilowatt  
**kWh**, kilowatthour  
**L**, lambert  
**L**, liter  
**lb**, pound  
**lb ap**, apothecary pound  
**lb avdp**, avoirdupois pound  
**lbf**, pound-force  
**lbf/ft**, pound-force foot  
 $\text{lbf/ft}^2$ , pound-force per square foot  
 $\text{lbf/ft}^3$ , pound-force per cubic foot  
 $\text{lbf/in}^2$ , pound-force per square inch  
 $\text{lb/ft}$ , pound per foot  
 $\text{lb/ft}^2$ , pound per square foot  
 $\text{lb/ft}^3$ , pound per cubic foot  
**lct**, long calcined ton  
**ldt**, long dry ton  
**LF**, low frequency  
**lin ft**, linear foot  
**l/m**, lines per minute  
**lm**, lumen  
 $\text{lm/ft}^2$ , lumen per square foot  
 $\text{lm/m}^2$ , lumen per square meter  
**lm-s**, lumen second  
 $\text{lm/W}$ , lumen per watt  
**l/s**, lines per second  
**L/s**, liter per second  
**lx**, lux  
**M**, mega (prefix, 1 million)  
**M**, million ( $3M = 3$  million)  
**m**, meter  
**m**, milli (prefix, one-thousandth)  
**M<sub>1</sub>**, monetary aggregate  
 $\text{m}^3$ , cubic meter  
 $\text{m}^2$ , square meter  
 $\mu$ , micro (prefix, one-millionth)  
 $\mu$ , micron (name micron obsolete); use  $\mu\text{m}$ , micrometer  
**mA**, milliampere  
 $\mu\text{A}$ , microampere  
**mbar**, millibar  
 **$\mu\text{bar}$** , microbar  
**Mc**, megacycle; see also **MHz** (megahertz), megacycles per second  
**mc**, millicycle; see also **mHz** (millihertz), millicycles per second  
**mcg**, microgram (obsolete, use  $\mu\text{g}$ )  
**mD**, millidarcy  
**meq**, milliequivalent  
**MeV**, megaelectronvolts  
**mF**, millifarad  
 $\mu\text{F}$ , microfarad  
**mG**, milligauss  
**mg**, milligram  
 $\mu\text{g}$ , microgram  
**Mgal/d**, million gallons per day  
**mH**, millihenry  
 $\mu\text{H}$ , microhenry  
**mho**, mho (obsolete, use **S**, siemens)  
**MHz**, megahertz  
**mHz**, millihertz  
**mi**, mile (statute)  
 $\text{mi}^2$ , square mile  
 $\text{mi/gal}$ , mile(s) per gallon  
 $\text{mi/h}$ , mile per hour  
**mil**, mil  
**min**, minute (time)  
 $\mu\text{in}$ , microinch  
**mL**, milliliter  
**mm**, millimeter  
 $\text{mm}^2$ , square millimeter  
 $\text{mm}^3$ , cubic millimeter  
**m $\mu$**  (obsolete); see **nm**, nanometer  
 $\mu\text{m}$ , micrometer  
 $\mu\text{m}^2$ , square micrometer  
 $\mu\text{m}^3$ , cubic micrometer  
 $\mu\mu$ , micromicron (use of compound prefixes obsolete; use **pm**, picometer)  
 $\mu\mu\text{f}$ , micromicrofarad (use of compound prefixes obsolete; use **pF**)  
**mmHg**, conventional millimeter of mercury  
 $\mu\text{mho}$ , micromho (obsolete, use  $\mu\text{S}$ , microsiemens)  
**M $\Omega$** , megohm  
**mo**, month  
**mol**, mole (unit of substance)  
**mol wt**, molecular weight  
**mp**, melting point  
**ms**, millisecond  
 $\mu\text{s}$ , microsecond  
**Mt**, megaton  
**mV**, millivolt  
 $\mu\text{V}$ , microvolt  
**MW**, megawatt  
**mW**, milliwatt  
 $\mu\text{W}$ , microwatt  
**MWd/t**, megawatt-days per ton  
**Mx**, maxwell  
**n**, nano (prefix, one-billionth)  
**N**, newton  
**nA**, nanoampere

nF, nanofarad	s, shilling
nm, nanometer (millimicron, obsolete)	S, siemens
N-m, newton meter	sb, stilb
$N/m^2$ , newton per square meter	scp, spherical candlepower
nmi, nautical mile	s-ft, second-foot
Np, neper	shp, shaft horsepower
ns, nanosecond	slug, slug
$N\cdot s/m^2$ , newton second per square meter	sr, steradian
nt, nit	sSf, standard saybolt fural
od, outside diameter	sSu, standard saybolt universal
Oe, oersted (use of A/m, amperes per meter, preferred)	stdft <sup>3</sup> , standard cubic foot (feet)
oz, ounce (avoirdupois)	Sus, saybolt universal second(s)
p, pico (prefix, one-trillionth)	T, tera (prefix, 1 trillion)
P, poise	Tft <sup>3</sup> , trillion cubic feet
Pa, pascal	T, tesla
pA, picoampere	t, tonne (metric ton)
pct, percent	tbsp, tablespoonful
pdl, poundal	thm, therm
pF, picofarad (micromicrofarad, obsolete)	ton, ton
pF, water-holding energy	tsp, teaspoonful
pH, hydrogen-ion concentration	Twad, twaddell
ph, phot; phase	u, (unified) atomic mass unit
pk, peck,	UHF, ultrahigh frequency
p/m, parts per million	V, volt
ps, picosecond	VA, voltampere
pt, pint	var, var
pW, picowatt	VHF, very high frequency
qt, quart	V/m, volt per meter
quad, quadrillion ( $10^{15}$ )	W, watt
<sup>o</sup> R, rankine	Wb, weber
<sup>o</sup> R, roentgen	Wh, watthour
R, degree rankine	W/(m·K), watt per meter kelvin
R, degree reaumur	W/sr, watt per steradian
rad, radian	W/(sr·m <sup>2</sup> ), watt per steradian square meter
rd, rad	x, unknown quantity
rem, roentgen equivalent man	yd, yard
r/min, revolutions per minute	yd <sup>2</sup> , square yard
rms, root mean square	yd <sup>3</sup> , cubic yard
r/s, revolutions per second	yr, year
s, second (time)	

٥ - اختصارات أخرى

توضح القائمة التالية اختصارات كانت شائعة الاستعمال ، ومازال بعضها مستخدماً إلى الآن ( عن Turbian ١٩٥٥ ) ، ونذكرها في هذا المقام لاحتمال الحاجة إليها ؛ حتى يمكن فهم واستيعاب بعض الدراسات القديمة

اختصارها المفرد ( والجمع )	الكلمة
art. (arts.)	article
cf.	compare
chap. (chaps.)	chapter
col. (cols.)	column
ed. (edd.)	edition
ed. (eds.)	editor
ed.	edited
<u>infra</u>	below
l. (ll.)	line
MS (MSS)	manuscript
n. (nn.)	note
n. (nn.)	footnote
n.d.	no date
n.n.	no name
n.p.	no place
No. (Nos.)	number
p. (pp.)	page
par. (pars.)	paragraph
Pt. (Pts.)	part
sec. (secs.)	section
<u>supra</u>	above
trans.	translator
trans.	translated
vs. (vss.)	verse
Vol. (Vols.)	volume

## اختصارات عناوين الدوريات ومختلف أنواع المطبوعات العلمية

نوضح فى القوائم التالية الاختصارات المسموح بها للكلمات التى ترد فى عناوين الدوريات ومختلف أنواع المطبوعات العلمية ، وهى متنوعة ، وتمثل ماتقره بعض الدوائر والدوريات العلمية المرموقة والمهتمة بتوحيد الاختصارات والرموز على أسس علمية سليمة . وإذا تباينت اختصارات بعض الكلمات بين مختلف القوائم فإنه يتعين الأخذ بما يناسب الدورية التى يُراد النشر فيها ، كما يتعين - دائماً - عدم قيام الباحث بوضع اختصارات من تأليفه تخرج عن نطاق المؤلف والشائع والمسموح به .

### ١ . قائمة اختصارات الـ Council of Biological Editors ( ١٩٦٤ )

تظهر الاختصارات فى هذه القائمة بالبنط الأسود boldcharacters ، وتستمر بقية حروف الكلمات التى تمثلها تلك الاختصارات بالحروف المائلة italics . وتمثل الشرطة التى توجد فى بعض الكلمات حروفاً محذوفة لانهم فى تحديد اختصارات تلك الكلمات .

<b>Abhandlung-</b>	<b>Agrogeological</b>	<b>Annual, Annuale,</b>
<b>Abstract</b>	<b>Agronom-</b>	<b>Annuario</b>
<b>Abteilung</b>	<b>Akadem-</b>	<b>Anorganisch</b>
<b>Academ-</b>	<b>Algologi-</b>	<b>Anthropolog-</b>
<b>Accadem-</b>	<b>Allgemein</b>	<b>Antibiotic</b>
<b>Administr-</b>	<b>Amendment</b>	<b>Antimicrobial</b>
<b>Advance-</b>	<b>America-, Amerika-</b>	<b>Anual-, Anuar-</b>
<b>Aerologicheskii</b>	<b>Anaesthes-,</b>	<b>Apicole</b>
<b>Aeromedica,</b>	<b>Anaesthetist</b>	<b>Apicult-</b>
<b>Aeromedic-</b>	<b>Anais, Anale</b>	<b>Apicult-</b>
<b>Aeronaut-</b>	<b>Anal-</b>	<b>Apothecary,</b>
<b>Aerzteblatt</b>	<b>Anatom-</b>	<b>Apotheker</b>
<b>Africa</b>	<b>Angewandt-</b>	<b>Appendix</b>
<b>Agraire, Agralia,</b>	<b>Animal-</b>	<b>Applicada, Applicat-,</b>
<b>Agrar-, Agrarnyi,</b>	<b>Annaes, Annal</b>	<b>Applied, Applique</b>
<b>Agricol-, Agricult-,</b>	<b>Anniversary</b>	<b>Arbeit-, Arbete-</b>
<b>Agrikult-</b>	<b>Annotation-</b>	<b>Arboriculture</b>
<b>Agrobotanica</b>	<b>Announcement</b>	<b>Archaeolog-</b>

Archeolog-	Biograf-, Biograph-	Cirurgia
Archiv-, Archiwum	Biokhim-	Class-
Arhiv	Bioklimatologie	Climatolog-
Arkhiu	Biolog-, Bioloskih	Clini-
Arquiu	Biomedical	Colegio
Asociacion	Biophysic-	Collaboration,
Associa-	Bioquimica	Collaborazione
Astronom-	Biotheoretic-	College
Astrophys-	Biuletyn, Biulleten	Comerci-, Commerce
Atmosfaer-,	Bjuletin	Commission,
Atmosfar-,	Bodenforschung	Committee
Atmosfer-,	Bodenkunde	Communic-
Atmosphar-,	Bohemosloven-	Company
Atmospher-	Boletim	Compar-
Atomic	Bolgarskii	Compte, Comptes
Auditory	Bollettino	Comunic-
Automatic	Botan-	Confederation
Avance-	Bratislav-	Conference
Avhandling-	Britain, Britanni-,	Congres-
	British	Conserv-
Bacolog-	Bryology-	Contribut-
Bacteriolog-	Buleten	Cooperat-
Bakteriolog-	Bulgarian	Corporation
Batteriolog-	Bulletin-, Bullettino	Cryptogam-
Behavior	Bureau	Cultur-, Cultuur
Beiheft		Cytochem-
Beilage	Canad-	Cytolog-
Beitrag	Cardiolog-	Czechoslovak
Belg-	Cartografica,	
Bericht	Cartographie	Decennial
Bibliograf-,	Catalog-	Demographic
Bibliograph-	Cechoslov-	Dendrolog-
Bibliotec-,	Centennial	Dent-
Bibliotek-,	Centraal, Central-	Departament-,
Bibliothec-,	Ceskoslovensk-	Departement-,
Bibliothek,	Chemi-	Department-
Bibliotheque	Chinese	Dermatolog-
Biennial	Chirurg-	Deutsch-
Biochem-	Chromatography	Digest-
Biochim-	Chroni-	Direc-, Direcc-,
Biodynamica	Ciencia-	Direct-, Direkt-
Biofizika	Cientifica	Disease
Biogeochemique	Circular	Disserta-
Biogeograph-	Cirkulaer	Divis-

<b>Document-</b>	<b>Farmaceut-,</b>	<b>Graduate</b>
<b>Doklad-</b>	<b>Farmaceut-,</b>	<b>Gynecolog-</b>
<b>Dokument</b>	<b>Farmaci-,</b>	
	<b>Farmaco</b>	
<b>Ecolog-</b>	<b>Farmacolog-</b>	<b>Haematolog-</b>
<b>Econom-</b>	<b>Federac-, Federal-</b>	<b>Helveti-</b>
<b>Edition, Editor</b>	<b>Finland-</b>	<b>Hematolog-</b>
<b>Educa-</b>	<b>Finn-</b>	<b>Herbari-</b>
<b>Egyet-</b>	<b>Fitolog-</b>	<b>Heredit-</b>
<b>Egyptian</b>	<b>Floricultura</b>	<b>Histochem-</b>
<b>Ekolog-</b>	<b>Floristica</b>	<b>Histolog-</b>
<b>Electrochem-</b>	<b>Flugblatt</b>	<b>Histor-</b>
<b>Electrochim-</b>	<b>Forest-</b>	<b>Horticol-, Horticult-,</b>
<b>Electrolog-</b>	<b>Forsch-</b>	<b>Hortikult-,</b>
<b>Electrotechnical</b>	<b>Foundation</b>	<b>Hortique</b>
<b>Embriolog-</b>	<b>Fysiograf-</b>	<b>Hospit-</b>
<b>Embryol-</b>	<b>Fysiolog-</b>	<b>Hungar-</b>
<b>Encyclopedia</b>		<b>Husbandry</b>
<b>Endocrinolog-</b>	<b>Gazet-, Gazett-</b>	<b>Hydrograf-</b>
<b>Engineer-</b>	<b>Gemolog-</b>	<b>Hydrolog-</b>
<b>Enolog-</b>	<b>Genel, General-</b>	<b>Hygien-</b>
<b>Entomolog-</b>	<b>Genet-</b>	<b>Ichthyolog-</b>
<b>Enzymolog-</b>	<b>Genitourinary</b>	<b>Illustr-</b>
<b>Epidemiolog-</b>	<b>Geochem-</b>	<b>Immigration</b>
<b>Escola-</b>	<b>Geochim-</b>	<b>Immunitatsforschung</b>
<b>Espan-</b>	<b>Geodaes-, Geodaet-,</b>	<b>Immunolog-</b>
<b>Essential</b>	<b>Geodas-, Geodat-,</b>	<b>Imperial-</b>
<b>Ethnograf-,</b>	<b>Geodes-, Geodet-,</b>	<b>Importacao,</b>
<b>Ethnograph-</b>	<b>Geodex-</b>	<b>Importacion,</b>
<b>Ethnolog-</b>	<b>Geograf-, Geograph-</b>	<b>Importation,</b>
<b>Etudes</b>	<b>Geolog-</b>	<b>Importazione</b>
<b>Eugenics</b>	<b>Geomagnetism</b>	<b>Imunolog-</b>
<b>Europe-</b>	<b>Geophys-</b>	<b>Incorporated</b>
<b>Evolution</b>	<b>Geriatric-</b>	<b>Industr-</b>
<b>Examination</b>	<b>Gerontolog-</b>	<b>Infect-</b>
<b>Exchange</b>	<b>Gesellschaft</b>	<b>Infekt-</b>
<b>Exhibit-</b>	<b>Gesundheit</b>	<b>Inorganic</b>
<b>Experiment-</b>	<b>Gibridizatsiia</b>	<b>Institucao,</b>
<b>Extension</b>	<b>Gidrohiol-</b>	<b>Institucio-,</b>
<b>Extract</b>	<b>Gidrolog-</b>	<b>Institut-,</b>
	<b>Gigiiena</b>	<b>Instytut</b>
<b>Facolt-, Faculd-,</b>	<b>Giornale</b>	<b>Interamerica</b>
<b>Facult-</b>	<b>Glaciology</b>	<b>Internal</b>
<b>Fakult-</b>		<b>International</b>

<b>Investiga-</b>	<b>Mathemat-</b>	<b>Nippon-</b>
<b>Iranicus</b>	<b>Mechanic-</b>	<b>Nord-</b>
<b>Itali-</b>	<b>Medecin-, Medic-,</b>	<b>Nuclear-</b>
	<b>Meditsin-,</b>	
<b>Jaarboek</b>	<b>Medizin-,</b>	<b>Observ-</b>
<b>Jahresbericht</b>	<b>Medycyna,</b>	<b>Occupation-,</b>
<b>Japan-, Japon-</b>	<b>Medyczny</b>	<b>Occupazione</b>
<b>Jardim, Jardin-</b>	<b>Memento, Memoir-,</b>	<b>Oceanograf-,</b>
<b>Jewish</b>	<b>Memorand-,</b>	<b>Oceanograph-</b>
<b>Jornal, Journal</b>	<b>Memoryal,</b>	<b>Ocular-</b>
<b>Jugoslav-</b>	<b>Memuary</b>	<b>Offici-</b>
	<b>Mental-</b>	<b>Ophthalmolog-</b>
<b>Katalog</b>	<b>Method-</b>	<b>Optic-, Opticheskii,</b>
<b>Kem-</b>	<b>Metrolog-</b>	<b>Opuk-, Optique,</b>
<b>Klass-</b>	<b>Mexic-</b>	<b>Optisch</b>
<b>Klini-</b>	<b>Micologia</b>	<b>Optometry</b>
<b>Kommission,</b>	<b>Microbiolog-</b>	<b>Organic-,</b>
<b>Kommitte</b>	<b>Microscop-</b>	<b>Organicheskii,</b>
<b>Kommun-</b>	<b>Mikologi-</b>	<b>Organique</b>
<b>Konfer-</b>	<b>Mineral-,</b>	<b>Organisat-,</b>
<b>Kongres, Kongress</b>	<b>Mineralog-</b>	<b>Organizac-,</b>
	<b>Minerolog-</b>	<b>Organizat-,</b>
<b>Laboratoire,</b>	<b>Minister-, Ministr-</b>	<b>Organize-,</b>
<b>Laborator-</b>	<b>Miscelan-, Miscellan-</b>	<b>Organizing,</b>
<b>Landwirtschaft-</b>	<b>Modern-</b>	<b>Organizzazione</b>
<b>Language</b>	<b>Molecul-</b>	<b>Orient-</b>
<b>Latin, Latinus</b>	<b>Monograf-,</b>	<b>Original-, Origineel</b>
<b>Latinoamericana</b>	<b>Monograph</b>	<b>Otolaryngolog-</b>
<b>Leaflet</b>	<b>Morpholog-</b>	<b>Otolog-</b>
<b>Lebanese</b>	<b>Moskovskii</b>	
<b>Lebensmittel</b>	<b>Municip-</b>	<b>Paleontolog-</b>
<b>Lectur-</b>	<b>Muse-</b>	<b>Pamflet,</b>
<b>Leningrad-</b>	<b>Mycolog-</b>	<b>Pamietnik-,</b>
<b>Librair-, Library</b>	<b>Nation-, Natirali,</b>	<b>Pamphlet-</b>
<b>Lichenolog-</b>	<b>Natirelles</b>	<b>Parasitenkunde</b>
<b>Limnolog-</b>	<b>Natur-</b>	<b>Parasitolog-</b>
<b>Linguistic</b>	<b>Naturforschung</b>	<b>Patent</b>
<b>Literar-, Literatur-</b>	<b>Nederland-</b>	<b>Pathogen</b>
<b>Lithuanian</b>	<b>Netherlands</b>	<b>Patholog-</b>
	<b>Neurobiolog-</b>	<b>Pediatr-</b>
<b>Magazin</b>	<b>Neurolog-</b>	<b>Pharmaceut-,</b>
<b>Malacolog-</b>	<b>Neurosurgery</b>	<b>Pharmaci-,</b>
<b>Malariolog-</b>	<b>New England</b>	<b>Pharmacy,</b>
<b>Mammalog-</b>	<b>New Series</b>	<b>Pharmazeut-,</b>
<b>Management</b>	<b>New Zealand</b>	<b>Pharmazie</b>

<b>Philosoph-</b>	<b>Review, Revista,</b>	<b>Transaction,</b>
<b>Philosophia</b>	<b>Revue</b>	<b>Transazione</b>
<b>Photograaf,</b>	<b>Rhumatologie</b>	<b>Translation</b>
<b>Photograf-</b>	<b>Rivista</b>	<b>Travail, Travaux</b>
<b>Physica-,</b>	<b>Romanian</b>	<b>Treasurer, Treasury</b>
<b>Physicist, Physics,</b>	<b>Royal</b>	<b>Tropic-, Tropik-,</b>
<b>Physicu-, Physik-,</b>	<b>Rumanian</b>	<b>Tropique,</b>
<b>Physique-</b>	<b>Russ-</b>	<b>Tropisch</b>
<b>Physiolog-</b>		<b>Trud-</b>
<b>Phytolog-</b>	<b>Scandinavi-</b>	<b>Turkish, Turkiye</b>
<b>Phytopatholog-</b>	<b>Schrift-</b>	<b>Typograf-,</b>
<b>Polish, Polnisch,</b>	<b>Schweizer-</b>	<b>Typograph</b>
<b>Polon-, Polski</b>	<b>Scien-</b>	
<b>Pomolog-</b>	<b>Scotland, Scottish</b>	<b>Ukrain-</b>
<b>Populae, Populair,</b>	<b>Sectio-</b>	<b>Union of Soviet</b>
<b>Popular-</b>	<b>Seismolog-</b>	<b>Socialist Republics</b>
<b>Postgraduate</b>	<b>Serie, Series</b>	<b>United Kingdom</b>
<b>Prehistori-</b>	<b>Serolog-</b>	<b>United Nations</b>
<b>Prelimin-</b>	<b>Silvicult-</b>	<b>United States</b>
<b>Proceeding</b>	<b>Simposio</b>	<b>United States of</b>
<b>Professional,</b>	<b>Social-, Sociedad-,</b>	<b>America</b>
<b>Profession-</b>	<b>Societ-</b>	<b>Universidad-,</b>
<b>Project-, Projekt</b>	<b>Sovet-</b>	<b>Universit-,</b>
<b>Psychiatr-</b>	<b>Special-</b>	<b>Universytet</b>
<b>Psycholog-</b>	<b>Station, Stazione</b>	<b>Urolog-</b>
<b>Psychopharmacology</b>	<b>Statist-</b>	
<b>Publication</b>	<b>Street</b>	<b>Virolog-</b>
<b>Publisher</b>	<b>Stud-</b>	<b>Virusforschung</b>
	<b>Sumar-, Summar-</b>	<b>Vitaminolog-</b>
<b>Quantitativ-</b>	<b>Supplement-</b>	<b>Viticult-</b>
<b>Quarterly</b>	<b>Surg-</b>	<b>Volume</b>
	<b>Survey</b>	
<b>Radiation</b>	<b>Swed-</b>	<b>Weekblad</b>
<b>Radioactive</b>	<b>Switzerland</b>	<b>Wetenschapp-</b>
<b>Radiobiolog-</b>	<b>Sympos-</b>	<b>Wissenschaft</b>
<b>Radiolog-</b>	<b>System-</b>	<b>Wochenschrift</b>
<b>Reclamation</b>		
<b>Record, Recueil</b>	<b>Taxonom-</b>	<b>Zeitschrift</b>
<b>Registr-</b>	<b>Techni-</b>	<b>Zeitung</b>
<b>Religious</b>	<b>Technolog-</b>	<b>Zentralblatt</b>
<b>Rendu, Rendus</b>	<b>Tijdschrift</b>	<b>Zhirovoi</b>
<b>Report</b>	<b>Topograf-,</b>	<b>Zhurnal</b>
<b>Reproduction</b>	<b>Topograph</b>	<b>Zoolog-</b>
<b>Repubblica, Republ-</b>	<b>Toxicolog-</b>	
<b>Research</b>		

٢ - قائمة اختصارات الجمعية الأمريكية لعلوم البساتين

الكلمة	اختصارها	الكلمة	اختصارها
Abstract(s)	Abstr.	Comptes Rendus	
Academy, -ic	Acad.	Hebdonadaires Seances	Compt. Rend.
Acta	Acta	Conference	Conf.
Advances	Adv.	Congress	Congr.
Africa, -an	Afr.	Contribution(s)	Contr.
Agriculture, -al, -ist	Agr.	Cooperative	Coop.
Agronomy	Agron.	Corporation	Corp.
American	Amer.	Council	Council
Analysis, -ytical	Anal.	County	County
and	&	Crop	Crop
Animal	Animal	Current	Current
Annal(s)	Ann.	Cytology, -ical	Cyt.
Annual	Annu.	Department	Dept.
Application(s)	Appl.	Development	Dev.
Applied	Applied	Digest	Dig.
Arboretum	Arb.	Disease	Dis.
Archives	Arch.	Dissertation	Diss.
Associate(s), -ed	Assoc.	Distribution	Distrib.
Association	Assn.	Division	Div.
Australian	Austral.	East	E.
Biochemical, -istry	Biochem.	Eastern	Eastern
Biology, -ical	Biol.	Ecology, -ical	Ecol.
Biometrics	Biometrics	Economy, -ical	Econ.
Botany, -ical	Bot.	Education	Educ.
Breeding	Breeding	Engineers, -ing	Eng.
British, Britain	Brit.	Enology	Enol.
Bulletin	Bul.	Entomology, -ical	Ent.
Bureau	Bur.	Environment, -al	Env.
Canada, -ian	Can.	Experiment, -al	Expt.
Center	Ctr.	Extension	Ext.
Chemical, -istry	Chem.	Faculty	Faculty
Chromatography	Chrom.	Farm	Farm
Circular	Circ.	Fertilizer	Fert.
Climatology -ical	Clim.	Florist(s)	Florist(s)
College	College	Flower(s)	Flower(s)
Colloquium	Colloq.	Foliage	Fol.
Committee	Comm.	Food	Food
Communication	Commun.	Forestry	For.
Company	Co.	Gazette	Gaz.
		General	Gen.

الكلمة	اختصارها	الكلمة	اختصارها
Genetics	Genet.	Physiology, -ical, -ia	Physiol.
Government	Govt.	Phytology, -ical	Phytol.
Grower(s)	Grower(s)	Phytopathology, -ical	Phytopath.
Handbook	Hdbk.	Plant	Plant
Heredity	Her.	Planta	Planta
Horticulture, -ae, -al	Hort.	Plantae, -arum	Plantae, -arum
Husbandry	Husb.	Pollution	Pollut.
Improvement	Imp.	Pomology, -ical	Pomol.
Industry, -ial	Ind.	Proceedings	Proc.
Information	Info.	Products	Prod.
Institute, -ion	Inst.	Propagation	Prop.
International	Intl.	Protection	Protection
Irrigation	Irr.	Publication(s)	Pub.
Japanese	Jpn.	Region	Reg.
Journal	J.	Report(s)	Rpt.
Laboratory, -ies	Lab.	Reporter	Rptr.
Leaflet	Lflt.	Research	Res.
Letters	Let.	Review(s), Revue(s)	Rev.
Linnaean, Linnean	Linn.	Science(s)	Sci.
Magazine	Mag.	Scientia	Scientia
Management	Mgt.	Scientific	Scientific
Market	Mkt.	Seed	Seed
Marketing	Mktg.	Series	Ser.
Meteorology, -ical	Met.	Service	Serv.
Microscopy	Micros.	Society	Soc.
Mycology, -ical	Myc.	Soil	Soil
National	Natl.	South	S.
Nematology, -ical	Nemat.	Southern	Southern
Netherlands	Neth.	Special	Spec.
New Zealand	N.Z.	Standard	Stnd.
Newsletter	Nwsl.	State	State
North	N.	Station	Sta.
Northern	Northern	Statistics, -ical	Stat.
Nurseryman	Nurseryman	Supplement(s)	Suppl.
Nutrition, -al	Nutr.	Survey	Survey
Official	Offic.	Symposium	Symp.
Pathology, -ical	Pathol.	Technical, -que	Tech.
Physics, -ical	Phys.	Technology, -ical	Technol.

الكلمة	اختصارها
Temperature	Temp.
Testing	Test.
Thesis	Thesis
Transactions	Trans.
Tropical	Trop.
United States (modifier)	U.S.
University	Univ.
Variety, -ies	Var.
Vegetable(s)	Veg.
Viticulture	Vitic.
West	W.
Western	Western
Yearbook	Yrbk.
Zeitschrift	Z.

## اختصارات ورموز وعلامات خاصة

### العلامات النطقية ACCENTS

- / acute
- ˘ breve
- ˘ cedilla
- ^ circumflex
- ¨ dieresis
- ˘ grave
- ˉ macron
- ˜ tilde

### ARROWS الأسهم

- direction
- ↖ direction
- ↗ direction
- ↘ direction
- ↙ direction
- ↔ bold arrow
- ⇨ open arrow
- ⇌ reversible reaction

$\%$	salinity
$m$	minim
$\equiv$	exchange
$\uparrow$	gas
$A$	mass number. $A_r$ relative atomic mass
$E$	energy, electromotive force
$e$	electron. ${}^0_1e$ charge and mass of electron
$F$	Faraday constant
$f$	frequency
$H$	heat of reaction
$I$	electric current
$k$	a constant
$L$	Avogadro constant
$M$	concentration in moles per cubic decimetre $M_r$ relative molecular mass
$m$	mass
$N$	number of molecules
$N$	neutron number
$n$	any number; mole fraction; number of moles
$n$	a neutron. ${}^1_0n$ charge and mass of neutron
$p$	pressure
$p$	a proton. ${}^1_1p$ charge and mass of proton
$Q$	quantity of electric charge
$R$	molar gas constant, resistance
$r$	gas constant, radius
$T$	thermodynamic temperature (measured in kelvin)
$t$	time. $t_{\frac{1}{2}}$ half life
$V$	volume, electric potential difference $V_m$ molar volume
$Z$	atomic number
$\Delta$	a change, e.g. $\Delta H$ change in heat
$\theta$	temperature difference, temperature (Celsius scale)
$\rho$	density

ELECTRICAL ( رموز فيزيائية ( كهربائية )

- $\mathcal{R}$  reluctance  
 $\leftrightarrow$  reaction goes both right and left  
 $\updownarrow$  reaction goes both up and down  
 $\updownarrow$  reversible  
 $\rightarrow$  direction of flow; yields  
 $\rightarrow$  direct current  
 $\rightleftarrows$  electrical current  
 $\rightleftarrows$  reversible reaction  
 $\rightleftarrows$  reversible reaction  
 $\rightleftarrows$  alternating current  
 $\rightleftarrows$  alternating current  
 $\rightleftarrows$  reversible reaction beginning at left  
 $\rightleftarrows$  reversible reaction beginning at right  
 $\Omega$  ohm; omega  
 $M\Omega$  megohm; omega  
 $\mu\Omega$  microohm; mu omega  
 $\omega$  angular frequency, solid angle; omega  
 $\Phi$  magnetic flux; phi  
 $\Psi$  dielectric flux; electrostatic flux; psi  
 $\gamma$  conductivity; gamma  
 $\rho$  resistivity; rho  
 $\Lambda$  equivalent conductivity  
 $HP$  horsepower

MATHEMATICAL رموز رياضية

- $\overset{\sim}{-}$  vinculum (above letters)  
 $\doteq$  geometrical proportion  
 $\dashv$  difference, excess  
 $\parallel$  parallel  
 $\parallel\!\!\parallel$  parallels  
 $\nparallel$  not parallels  
 $| |$  absolute value  
 $\cdot$  multiplied by  
 $:$  is to; ratio  
 $\div$  divided by  
 $\therefore$  therefore; hence  
 $\because$  because  
 $\propto$  proportion; as  
 $\ll$  is dominated by

- $\succ$  greater than  
 $\supset$  greater than  
 $\supseteq$  greater than or equal to  
 $\supseteq$  greater than or equal to  
 $\supsetneq$  greater than or less than  
 $\succ$  is not greater than  
 $\prec$  less than  
 $\subset$  less than  
 $\supseteq$  less than or greater than  
 $\succcurlyeq$  is not less than  
 $\triangleleft$  smaller than  
 $\triangleleft$  less than or equal to  
 $\triangleleft$  less than or equal to  
 $\equiv$  or  $\geq$  greater than or equal to  
 $\triangleleft$  equal to or less than  
 $\triangleleft$  equal to or less than  
 $\nabla$  is not greater than equal to or less than  
 $\nabla$  equal to or greater than  
 $\nabla$  is not less than equal to or greater than  
 $\perp$  equilateral  
 $\perp$  perpendicular to  
 $\vdash$  assertion sign  
 $\approx$  approaches  
 $\approx$  approaches a limit  
 $\sphericalangle$  equal angles  
 $\neq$  not equal to  
 $\equiv$  identical with  
 $\neq$  not identical with  
 $\approx$  score  
 $\approx$  or  $\approx$  nearly equal to  
 $\equiv$  equal to  
 $\sim$  difference  
 $\approx$  perspective to  
 $\approx$  congruent to approximately equal  
 $\approx$  difference between  
 $\diamond$  geometrically equivalent to  
 $($  included in  
 $)$  excluded from  
 $\subset$  is contained in  
 $\cup$  logical sum or union  
 $\cap$  logical product or intersection  
 $\sqrt{\quad}$  radical  
 $\sqrt{\quad}$  root  
 $\sqrt{\quad}$  square root  
 $\sqrt[3]{\quad}$  cube root

- √ fourth root
- √ fifth root
- √ sixth root
- π pi
- ε base (2.718) of natural system of logarithms; epsilon
- ε is a member of; dielectric constant; mean error; epsilon
- + plus
- ⊕ bold plus
- minus
- ⊖ bold minus
- / shill(ing); slash; virgule
- ± plus or minus
- ∓ minus or plus
- × multiplied by
- ≡ bold equal
- # number
- per per
- % percent
- ∫ integral
- | single bond
- \ single bond
- / single bond
- || double bond
- ∥ double bond
- ≡ double bond
- ⊞ benzene ring
- ∂ or δ differential; variation
- ∂ Italian differential
- approaches limit of
- ~ cycle sine
- ∫ horizontal integral
- ∮ contour integral
- ∝ variation; varies as
- Π product
- Σ summation of; sum; sigma
- ! or L factorial product

SEX

الجنس

- ♂ or ♂ male
- male, in charts
- ♀ female
- female, in charts
- ♀ hermaphrodite

## الإحصاء

من أهم الرموز والاختصارات المستخدمة في مجال الإحصاء مايلي :

الرمز	معناه
N	عدد الملاحظات ( أو الأفراد أو القياسات ) في العشرة .
n	عدد الملاحظات ( أو القياسات ) في العينة .
$\mu$	متوسط العشرة ( الحرف اليوناني الصغير : ميو ) .
$\bar{Y}$ أو $\bar{X}$	متوسط العينة ( حرف X أو Y كبير uppercase تحت شرطة bar ) .
$\sigma$	الانحراف القياسي standard deviation للعشرة ( الحرف اليوناني الصغير : زجا sigma ) .
SD	الانحراف القياسي للعينة ( حروف capital صغيرة البنت ) .
$\sigma^2$	تباين العشرة population variance ( الحرف اليوناني الصغير زجا تربيع ) .
$s^2$	تباين العينة ( حرف s صغير تربيع ) .
SE	الخطأ القياسي لمتوسط العينة Standard Error of the mean of a sample ( حروف capital صغيرة البنت ) .
CV	معامل التباين Coefficient of variation ( حروف capital صغيرة البنت ) .
t	القيمة الإحصائية Students t ( تكتب مائلة ) .
F	نسبة التباين Variance ratio في التحليل الإحصائي .
df	درجات الحرية degrees of freedom .
HSD	أعلى فروقات معنوية highest significant differences ( حروف capital صغيرة البنت ) .
LSD	أقل فروقات معنوية Least significant differences ( حروف capital صغيرة البنت ) .
$\chi^2$	قيمة مربع كاي chi-square value ( الحرف اليوناني الصغير : كاي chi تربيع ) .
$\beta$	معامل الارتداد regression coefficient للعشرة ( الحرف اليوناني الصغير : بيتا beta ) .
b	معامل الارتداد للعينة ( يكتب مائلاً ) .
$\rho$	معامل الارتباط الخطي Coefficient of linear correlation للعشرة ( الحرف اليوناني الصغير : رو rho ) .
r	معامل الارتباط البسيط للعينة ( يكتب مائلاً ) .

معناه	الرمز
معامل مقارنة متغيرين Coefficient of determination ( يكتب مائلاً ولكن رمز التريبع لا يكون مائلاً ) .	$r^2$
معامل الارتباط المتعدد Coefficient of multiple correlation	$R$
معامل مقارنة ثلاثة متغيرات أو أكثر Coefficient of multiple determination ( يكتب مائلاً ولكن رمز التريبع لا يكون مائلاً ) .	$R^2$
تحليل التباين analysis of variance .	ANOVA
غير معنوي nonsignificant ( حروف capital صغيرة ) .	NS

### العناصر

نوضح - فيما يلي - قائمة بأسماء العناصر المعروفة ورموزها مع أعدادها الذرية وأوزانها الذرية .

العنصر	رمزه	عدده الذرى	وزنه الذرى	العنصر	رمزه	عدده الذرى	وزنه الذرى
Actinium	Ac	89	227.0278	Germanium	Ge	32	72.59
Aluminium	Al	13	26.98154	Gold	Au	79	196.9665
Americium	Am	95	(243)	Hafnium	Hf	72	178.49
Antimony (Stibium)	Sb	51	121.75	Helium	He	2	4.00260
Argon	Ar	18	39.948	Holmium	Ho	67	164.9304
Arsenic	As	33	74.9216	Hydrogen	H	1	1.00794
Astatine	At	85	(210)	Indium	In	49	114.82
Barium	Ba	56	137.33	Iodine	I	53	126.9045
Berkelium	Bk	97	(247)	Iridium	Ir	77	192.22
Beryllium	Be	4	9.01218	Iron	Fe	26	55.847
Bismuth	Bi	83	208.9804	Krypton	Kr	36	83.80
Boron	B	5	10.81	Lanthanum	La	57	138.9055
Bromine	Br	35	79.904	Lawrencium	Lr	103	(260)
Cadmium	Cd	48	112.41	Lead	Pb	82	207.2
Caesium	Cs	55	132.9054	Lithium	Li	3	6.941
Calcium	Ca	20	40.08	Lutetium	Lu	71	174.967
Californium	Cf	98	(251)	Magnesium	Mg	12	24.305
Carbon	C	6	12.011	Manganese	Mn	25	54.9386
Cerium	Ce	58	140.12	Mendelevium	Md	101	(258)
Chlorine	Cl	17	35.453	Mercury	Hg	80	200.59
Chromium	Cr	24	51.996	Molybdenum	Mo	42	95.94
Cobalt	Co	27	58.9332	Neodymium	Nd	60	144.24
Copper	Cu	29	63.546	Neon	Ne	10	20.179
Curium	Cm	96	(247)	Neptunium	Np	93	237.0482
Dysprosium	Dy	66	162.50	Nickel	Ni	28	58.69
Einsteinium	Es	99	(252)	Niobium	Nb	41	92.9064
Erbium	Er	68	167.26	Nitrogen	N	7	14.0067
Europium	Eu	63	151.96	Nobelium	No	102	(259)
Fermium	Fm	100	(257)	Osmium	Os	76	190.2
Fluorine	F	9	18.998403	Oxygen	O	8	15.9994
Francium	Fr	87	(223)	Palladium	Pd	46	106.42
Gadolinium	Gd	64	157.25	Phosphorus	P	15	30.97376
Gallium	Ga	31	69.72	Platinum	Pt	78	195.08
				Plutonium	Pu	94	(244)

العنصر	رمزه	عدده الذرى	وزنه الذرى	العنصر	رمزه	عدده الذرى	وزنه الذرى
Polonium .....	Po	84	(209)	Technetium.....	Tc	43	(98)
Potassium (Kalium).....	K	19	39.0983	Tellurium.....	Te	52	127.60
Praseodymium ....	Pr	59	140.9077	Terbium.....	Tb	65	158.9254
Promethium.....	Pm	61	(145)	Thallium.....	Tl	81	204.383
Protactinium.....	Pa	91	231.0359	Thorium.....	Th	90	232.0381
Radium.....	Ra	88	226.0254	Thulium.....	Tm	69	168.9342
Radon.....	Rn	86	(222)	Tin.....	Sn	50	118.69
Rhenium.....	Re	75	186.207	Titanium.....	Ti	22	47.88
Rhodium.....	Rh	45	102.9055	Tungsten (Wolfram)	W	74	183.85
Rubidium.....	Rb	37	85.4678	(Unnilhexium).....	(Unh)	106	(263)
Ruthenium.....	Ru	44	101.07	(Unnilpentium).....	(Unp)	105	(262)
Samarium.....	Sm	62	150.36	(Unnilquadium).....	(Unq)	104	(261)
Scandium.....	Sc	21	44.9559	Uranium.....	U	92	238.0289
Selenium.....	Se	34	78.96	Vanadium.....	V	23	50.9415
Silicon.....	Si	14	28.0855	Xenon.....	Xe	54	131.29
Silver.....	Ag	47	107.8682	Ytterbium.....	Yb	70	173.04
Sodium (Natrium).....	Na	11	22.98977	Yttrium.....	Y	39	88.9059
Strontium.....	Sr	38	87.62	Zinc.....	Zn	30	65.38
Sulfur.....	S	16	32.06	Zirconium.....	Zr	40	91.22
Tantalum.....	Ta	73	180.9479				

وتجدر الإشارة إلى أن عناصر اليود ، والخاصين ، والهليوم تأخذ الرموز I ، و As ، و He ؛ وهى رموز قد تُحدث بلبلة فى ذهن القارئ واختلاط المعنى عليه إذا جاءت فى مواضع معينة من الجمل ؛ ولذا . . يتعين فى مثل هذه الحالات كتابة أسماء العناصر كاملة .

### الوقت والزمن

تبين القائمة التالية الاختصارات التى يشيع استخدامها للدلالة على الوقت والزمن

رمزها أو اختصارها	الكلمة
AD	Anno Domini بعد ميلاد المسيح
AD	Christian calender التاريخ الميلادى
BC	Before Christ قبل ميلاد المسيح
H	Hijri (Islamic calender) التاريخ الهجرى
y	year سنة
mo	month شهر
wk	week أسبوع
d	day يوم
am	ante meridiem قبل الظهر
pm	post meridiem بعد الظهر
hr	hour ساعة
min	minute دقيقة
s	second ثانية

### SHAPES أشكال متنوعة

- ◆ solid diamond
- ◇ open diamond
- circle
- ▲ solid triangle
- △ triangle
- square
- solid square
- ▭ parallelogram
- ▭ rectangle
- ▭ double rectangle
- ★ solid star
- ☆ open star
- └ right angle
- ∠ angle
- ✓ check
- ✓ check

## WEATHER الحالة الجوية

- T thunder
- ⚡ thunderstorm;  
sheet lightning
- ⚡ sheet lightning
- ↓ precipitate
- rain
- ← floating ice crystals
- ↔ ice needles
- ▲ hail
- ⊖ sleet
- ∞ glazed frost
- ⊔ hoarfrost
- √ frostwork
- \* snow or sextile
- ⊠ snow on ground
- + drifting snow (low)
- fog
- ⊙ haze
- △ Aurora

## MISCELLANEOUS رموز متنوعة

- ⌋ move right
- ⌈ move left
- or ⊙ or ① annual
- ⊙⊙ or ② biennial
- ∈ element of
- Ⓢ scruple
- f function
- ! exclamation mark
- ⊕ plus in square
- Ⓐ perennial
- φ diameter
- ̄ mean value of e
- U mathmodifier
- ⊂ mathmodifier
- ⊠ dot in square
- ⊠ dot in triangle
- ⊠ station mark
- @ at
- § section
- † dagger
- ‡ double dagger
- % account of
- ‰ care of
- ⌋ score
- ¶ paragraph
- Ⓟ Anglo-Saxon
- ⊕ center line
- ♂ conjunction
- ⊥ perpendicular to
- " or " ditto
- α variation
- ℞ recipe

## الحروف اليونانية

كثيرا ماتستخدم الحروف الأبددية اليونانية كرموز فى العلوم والرياضيات ، وقد سبق بيان تلك الحروف فى الفصل الخامس .

## اختصارات أسماء المدن والمناطق الجغرافية

سبق أن تناولنا هذا الموضوع بالتفصيل فى الفصل السابع .