Khmer script

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Khmer អក្សរខ្មែរ Type Abugida Spoken languages Khmer Time period c. 611–present[1] Parent systems
Proto-Canaanite alphabet
· Phoenician alphabet
· Aramaic alphabet
· Brāhmī
· Pallava
· Khmer
Child systems Thai
Lao Sister systems Mon
Old Kawi Unicode range U+1780–U+17FF,
U+19E0–U+19FF ISO 15924 Khmr

consonants are special forms used to form consonant clusters. Also sometimes referred to as "sub-consonants", subscript consonants often resemble the corresponding consonant symbol, only smaller. In Khmer, they are known as 'cheung âksâr' (ជើងអក្សរ), meaning the *foot of a letter*. In forming consonant clusters, the second (and where necessary, the third) consonant sound of the cluster is written as a subscript which cancels the inherent vowel of the preceding consonant. Most subscript consonants are written directly below consonant which they follow, although subscript /r/ is written before while a few others have ascending elements which appear after.

Listed in the table below are the pronunciations of the consonants when recited. Although Khmer spelling is very regular, the pronunciation of some consonants may be slightly different from the recited version in a few words. This is especially true in loan words. The IPA values given are for consonants in the initial or medial position. Because of Khmer phonology, in which final stops are unreleased and possible finals are limited, word-final values may differ. For example, word-final /s/ is pronounced /h/ and, in most dialects, word-final /r/ is silent. The inherent vowels of consonants in the final position are almost never pronounced. The two obsolete consonants are highlighted in gray.

Consonants	Subscript form	Transliteration	IPA
ក	្ក	kâ	kɑ
ខ	្ខ	khâ	kʰɑ
គ	្គ	kô	kɔ
ឃ	្ឃ	khô	kʰɔ
ង	្ង	ngô	ŋɔ
ច	្ច	châ	cɑ
ឆ	្ឆ	chhâ	cʰɑ
ជ	្ជ	chô	cɔ
ឈ	្ឈ	chhô	cʰɔ
ញ	្ញ	nhô	ɲɔ
ដ	្ដ	dâ	ɗɑ
ឋ	្ឋ	thâ	tʰɑ
ឌ	្ឌ	dô	ɗɔ
ឍ	្ឍ	thô	tʰɔ
ណ	្ណ	nâ	nɑ
ត	្ត	tâ	tɑ
ថ	្ថ	thâ	tʰɑ
ទ	្ទ	tô	tɔ
ធ	្ធ	thô	tʰɔ
ន	្ន	nô	nɔ
ប	្ប	bô	ɓɔ

Dependent vowels & diacritics	Transliteration a-series	Transliteration o-series	IPA a-series	IPA o-series
អា	a	éa	aː	iːə
អិ	ĕ	ĭ	e	ɨ
អី	ei	i	əj	iː
អឹ	ŏe		ə	ɨ
អឺ	œ		əːɨ	ɨː
អុ	ŏ	ŭ	o	u
អូ	o	u	oːu	uː
អួ	uŏ		uːə	
អើ	aeu	eu	aːə	əː
អឿ	eua		ɨːə	
អៀ	iĕ		iːə	
អេ	é		eːi	eː
អែ	ê		aːe	ɛː
អៃ	ai	ey	aj	ij
អោ	aô	oŭ	aːo	oː
អៅ	au	ŏu	aw	ɨw
អុំ	om	ŭm	om	um
អំ	âm	um	ɑm	um
អាំ	ăm	ŏâm	am	oəm
អះ	ăh	eăh	aʰ	eəʰ
អុះ	ŏh	uh	oʰ	uʰ
អេះ	éh		eiʰ	eʰ
អោះ	aŏh	uŏh	ɑʰ	ɔəʰ

- For technical reasons, the dependent vowels are seen here paired with the letter អ"(KHMER LETTER QA in Unicode) as not all browsers will display them by themselves correctly.

Independent vowels

Independent vowels are vowels that do not have to be paired with a consonant in a syllable, hence the name. In Khmer they are called *srăk penhtuŏ* (ស្រៈពេញតួ) which means *complete vowels*.

Independent vowels	Transliteration	IPA
អ	â	ʔɑʔ
អា	a	ʔa

ៈ	kakâbat (កាកបាទ)	kakapada (the *crow's foot*); more a punctuation mark than a diacritic; used in writing to indicate the rising intonation of an exclamation or interjection; often placed on particles such as /na/, /nɑː/, /nɛː/, /vəːj/, and the feminine response /cah/
៎	sanhyoŭk sannha (សំយោគសញ្ញា)	represents a short inherent vowel in Sanskrit and Pali words; usually omitted
៑	vĭréam (វិរាម)	a mostly obsolete diacritic, corresponds to the virama
្	cheung (ជើង)	a.w. coeng; a sign developed for Unicode to input subscript consonants, appearance of this sign varies among fonts

Punctuation marks

The Khmer script uses several unique punctuation marks as well as some borrowed from the Latin script such as the question mark. The period in the Khmer language "។" resembles an eighth rest in music writing.

Ligatures

Most consonants, including a few of the subscripts, form ligatures with all dependent vowels that contain the symbol used for the vowel *a* (ា). A lot of these ligatures are easily recognizable, however a few may not be. One of the more unrecognizable is the ligature for the *bâ* and *a* which was created to differentiate it from the consonant symbol *hâ* as well as the ligature for *châ* and *a*. It is not always necessary to connect consonants with the dependent vowel *a*.

Examples of ligatured symbols:

ក + េា = កោ (kaŏ)
ព + េៅ = ពៅ (pau)
ច + ា = ចា (cha)
ប + ា = បា (ba)

Ligatured consonant subscript and vowel combination:

ច + ្ប + ា = ច្បា (chba)
ម + ្ស + េៅ = ម្សៅ (msau)

Numerals

Main article: Khmer numerals

The numerals of the Khmer script, similar to that used by other civilizations in Southeast Asia, are also derived from the southern Indian script. Arabic numerals are also used, but to a lesser extent.

Khmer numerals	០	១	២	៣	៤	៥	៦	៧	៨	៩
Arabic numerals	0	1	2	3	4	5	6	7	8	9

Khmer in Unicode

The Unicode range for Khmer consists of two ranges: U+1780 ... U+17FF for the basic characters, and U+19E0 - U+19FF for additional symbols. Grey areas indicate non-assigned code points.

Khmer
Unicode.org chart (PDF)

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
U+178x	ក	ខ	គ	ឃ	ង	ច	ឆ	ជ	ឈ	ញ	ដ	ឋ	ឌ	ឍ	ណ	ត

The **Khmer script** (អក្ខរក្រមខេមរភាសា; âkkhârâkrâm khémârâ phéasa, informally aksar Khmer; អក្សរខ្មែរ) is used to write the Khmer language which is the official language of Cambodia. It is often considered to be the longest alphabet in the world.

It is generally thought that the Khmer script developed from the Pallava script of India.[2] The oldest dated inscription in Khmer was found at Angkor Borei in Takev Province south of Phnom Penh and dates from 611 AD.[3] Those inscriptions that have survived are engraved in stone and the evolution of Khmer script is as follows:

- Han Chey, approximately 6th century
- Veal Kan Teng, end of the 6th or early 7th century
- Ang Chomney Kor, 667 century
- Inn Kor Sey, 970 century
- Preash Keo, 1002 AD
- Nor Korr, 1066 AD
- Banteay Chmar, early 12th or 13th century
- Angkor Wat, 13th century
- Angkor script, 1702 AD

The Khmer alphabet has fewer symbols for vowels than the language has vowel phonemes. To account for this, each consonant belongs to one of two series, and the vowel produced depends on which series the consonant belongs to (making it an abugida rather than a true alphabet). Therefore, most vowel signs have two possible pronunciations, depending on which series the consonant belongs to. When no vowel sign is present, usually the inherent vowel of the consonant is used. Vowels signs can be divided into two groups: dependent vowel signs, which are written around a consonant letter, and independent vowel letters, which can stand alone. Dependent vowel signs are used more frequently than independent vowels and all independent vowel letters can be phonetically rendered with a dependent vowel. Khmer also has a number of diacritics, which

can change the series of the consonant or change the pronunciation of the vowel.

Styles

There are several styles of Khmer script which are used for different purposes.

- '**Âksâr chriĕng**' refers to slanted (or italic) letters. Slanted letters do not serve the same purpose as italics in English, so entire bodies of text such as novels and other publications may be produced in 'âksâr chriĕng' .
- '**Âksâr chhôr**' refers to any style that is "standing" or upright. Upright letters were previously not as common as 'âksâr chriĕng', but now most computer fonts display Khmer text upright by default for ease of reading.
- '**Âksâr mul**' is a round style which is used for titles and headings in Cambodian documents, books, or currency, on shop signs or banners. Religious text on palm leaves may be entirely written in this script style. It is sometimes used to write royal names while the surrounding text remains plain. Several consonants and some subscripts in this style take on different forms than their counterparts in the standard orthography.
- '**Âksâr khâm**' is a variation of 'âksâr mul', with only minor differences.

The last two styles, when handwritten, are usually pencil-line width, however, in printed form and on computer fonts, they are usually seen in wider widths. Most Khmer computer fonts depict neither style correctly; in fact, some may meld elements of 'âksâr mul' and 'âksâr khâm' into one style, so generally either is referred to as 'âksâr mul'.

Consonants

There are 35 Khmer consonants symbols, although modern Khmer only uses 33, two having become obsolete. Subscript

ផ	្ផ	phâ	pʰɑ
ព	្ព	pô	pɔ
ភ	្ភ	phô	pʰɔ
ម	្ម	mô	mɔ
យ	្យ	yô	jɔ
រ	្រ	rô	rɔ
ល	្ល	lô	lɔ
វ	្វ	vô	vɔ
ឝ	្ឝ	shâ	-
ឞ	្ឞ	ssô	-
ស	្ស	sâ	sɑ
ហ	្ហ	hâ	hɑ
ឡ	្ឡ*	lâ	lɑ
អ	្អ	qâ	ʔɑ

* The subscript for the consonant *lâ* is included in Unicode although its usage in modern Khmer is generally non-existent.

For some phonemes in loanwords, the Khmer writing system has 'created' supplementary consonants. Most of these consonants are created by stacking a subscript under the character for/hɑ/ to form digraphs. The consonant for /pɑ/, however, is created by using the diacritical sign called *musĕkâtônd* over the consonant

for /bɑ/. These additional consonants are mainly used to represent sounds in French and Thai loanwords.

Digraph consonants	Transliteration	IPA
ហ្គ	gâ	gɑ
ហ្ន	nâ	nɑ
ប៉	pâ	pɑ
ហ្ម	mâ	mɑ
ហ្ល	lâ	lɑ
ហ្វ	fâ, wâ	fɑ, wɑ
ហ្ស	žâ	ʒɑ

Dependent vowels

There are 16 unique dependent vowel symbols, although this name can be added up to 24 when dependent vowels with diacritical symbols are included. Dependent vowels are known in Khmer as *srăk nissăy* (ស្រៈនិស្ស័យ) or *srăk phsâm* (ស្រៈផ្សំ).

Dependent vowels must always be combined with a consonant in orthography. For most of the vowel symbols, there are two sounds (registers). The sound of the vowel used depends on the series (the inherent vowel) of the dominant consonant in a syllable cluster.

Dependent vowels	Transliteration		IPA	
	a-series	o-series	a-series	o-series
អ	ar	or	ar	or

ឥ	ĕ	ʔe
ឦ	ei	ʔəj
ឧ	ŏ	ʔ
ឨ		
ឩ	ŭ	ʔu
ឪ	ŏu	ʔɨw
ឫ	rŏe	ʔrɨ
ឬ	rœ	ʔrɨː
ឭ	lŏe	ʔlɨ
ឮ	lœ	ʔlɨː
ឯ	é	ʔeː
ឰ	ai	ʔaj
ឱ, ឲ	aô	ʔaːo
ឳ	âu	ʔaw

Diacritics

Diacritics	Name	Notes
ំ	nĭkkôhĕt (និគ្គហិត)	niggahita; nasalizes the inherent vowels and some of the dependent vowels, see anusvara, sometimes used to represent [aɲ] in Sanskrit

		loanwords
ះ	reăhmŭkh (រះមុខ)	*shining face*; adds final aspiration to dependent or inherent vowels, usually omitted, corresponds to the visarga diacritic, it maybe included as dependent vowel symbol
ៈ	yŭkôleăkpĭntŭ (យុគលពិន្ទុ)	yugalabindu (*pair of dots*); adds final glottalness to dependent or inherent vowels, usually omitted, a relatively new diacritic
៉	musĕkâtônd (មូសិកទន្ត)	musikadanta (*mouse teeth*); used to convert some o-series consonants to the a-series
៊	trei sâpt (ត្រីសព្ទ)	*trisabda*; used to convert some a-series consonants to the o-series
ុ	kbiĕh kraôm (ក្បៀសក្រោម)	also known as *bŏkcheung* (បុកជើង); used in place when the diacritics *trei sâpt* and *musĕkâtônd* impede with superscript vowels
់	bântăk (បន្តក់)	used to shorten some vowels
៌	rôbat (របាទ), répheăk (រេផៈ)	rapada, repha; behaves similarly to the tôndâkhéat, corresponds to the Devanagari diacritic 'repha', however it lost its original function which was to represent a vocalic r
៍	tôndâkhéat (ទណ្ឌឃាដ)	daṇḍaghata; used to render some letters as unpronounced

U+1 79x	ថ	ទ	ធ	ន	ប	ផ	ព	ភ	ម	យ	រ	ល	វ	ឝ	ឞ	ស
U+1 7Ax	ហ	ឡ	អ	ឣ	ឤ	ឥ	ឦ	ឧ	ឨ	ឩ	ឪ	ឫ	ឬ	ឭ	ឮ	ឯ
U+1 7Bx	ឰ	ឱ	ឲ	ឳ	឴	឵	ា	ិ	ី	ឹ	ឺ	ុ	ូ	ួ	ើ	ឿ
U+1 7Cx	ៀ	េ	ែ	ៃ	ោ	ៅ	ំ	ះ	ៈ	៉	៊	់	៌	៍	៎	៏
U+1 7Dx	័	៑	្	៓	។	៕	៖	ៗ	៘	៙	៚	៛	ៜ	៝		
U+1 7Ex	០	១	២	៣	៤	៥	៦	៧	៨	៩						
U+1 7Fx	៰	៱	៲	៳	៴	៵	៶	៷	៸	៹						

Khmer Symbols
Unicode.org chart (PDF)

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
U+1 9Ex	᧠	᧡	᧢	᧣	᧤	᧥	᧦	᧧	᧨	᧩	᧪	᧫	᧬	᧭	᧮	᧯
U+1 9Fx	᧰	᧱	᧲	᧳	᧴	᧵	᧶	᧷	᧸	᧹	᧺	᧻	᧼	᧽	᧾	᧿

Notes

1. ^ Herbert, Patricia; Anthony Crothers Milner (1989). *South-East Asia: languages and literatures : a select guide.* University of Hawaii Press. pp. 51-52. ISBN 0824812670.
2. ^ Punnee Soonthornpoct: *From Freedom to Hell: A History of Foreign Interventions in Cambodian Politics And Wars.* page 29, Vantage Press, Inc

3. ^ Russell R. Ross: *Cambodia: A Country Study,* page 112, Library of Congress. Federal Research Division, 1990

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