

Language Sounds

English is seen as having 44 phonemes – 20 vowels and 24 consonants. This is more a convention than a fact.

ɪ READ	ɪ SIT	ʊ BOOK	u: TOO	ɪə HERE	eɪ DAY		
e MEN	ə AMERICA	ɜ: WORD	ɔ: SORT	ʊə TOUR	ɔɪ BOY	əʊ OO	
æ CAT	ʌ BUT	ɑ: PART	ɒ NOT	eə WEAR	aɪ MY	aʊ HOW	
p PIG	b BED	t TIME	d DO	tʃ CHURCH	dʒ JUDGE	k KILO	g GO
f FIVE	v VERY	θ THINK	ð THE	s SIX	z ZOO	ʃ SHORT	ʒ CASUAL
m MILK	n NO	ŋ SING	h HELLO	l LIVE	r READ	w WINDOW	j YES

Different languages around the world use different combinations of sounds to represent words. The distinct sounds used in a language to build its words is its **phonemic inventory**. The universal range of language sounds is thought to include 28 pure vowels and 83 consonants (as of 2005, but the range keeps expanding). See over for the current IPA.

Consonants and vowels

Consonants involve specific actions by the vocal tract (tongue and lip positions and movements, nasal or aural airflow and stops, use of teeth, etc.), so they are easier to describe and have less variation (they are **digital sounds**). The vowel space is much more fluid and subject to individual and dialect variation, so the pure vowels represent relative positions in the vowel space and not absolute positions (they are **analogue sounds**). For instance, the vowel in the English word BOOT can be represented by /u/, /u:/, /ʊ/, /ʊ:/, /ʊ/, /ʊ:/ or /ə/, depending on dialect.

Mutations

Sounds are also adjusted by the sounds around them. For instance, if a word ending with /n/ is followed by one beginning with /p/ then the /n/ tends to be mutated to /m/. So “in place” is often spoken as “im place”. Some languages, like Welsh, recognise these mutations in their spelling systems. So the word for Wales (Cymru, /kʌmru/) can also be encountered as Gymru, Ngymru and Nghymru.

Ligands

If a word with a consonant ending is followed by one beginning with a vowel, the final consonant can bridge the two words (appear to be attached to both) or switch attachment. So “giving up” can be pronounced as “givin<g>up” or “givin>gup”. If you want your language to avoid this you have to ensure there is a stop between syllables where this could occur – “givin’ up” (see Mandubza essay). However, be aware that the stop is a weak phonetic feature, and disappears over time (“givi<n>up”).

Sound “facts”

- The most common consonants in world languages are /p/, /t/, /k/, /m/, /n/. [Note that the first three are plosive unvoiced, and the last two are nasal. [I don’t know what significance this has, but it’s interesting.]
- The language with the fewest phonemes is **Rotokas**, from East Papua (11 phonemes).
- The language with the most phonemes is **!Xóǀ** (108 phonemes). Approx. 4,200 people speak !Xóǀ, most live in Botswana.
- The Language with the fewest consonant sounds is **Rotokas** (6 consonants).
- The Language with the most consonant sounds was **Ubyx** (81 consonants). This language of the North Caucasian Language family, once spoken in the Haci Osman village near Istanbul, has been extinct since 1992. Among living languages, **!Xóǀ** has the most consonants (77).
- The Language with the fewest vowel sounds was **Ubyx** (2 vowels). The related language **Abkhaz** also has 2 vowels in some dialects. There are approximately 106,000 Abkhaz speakers living primarily in Georgia.
- The Language with the most vowel sounds is **!Xóǀ** (31 vowels – which means that the universal range of vowels is short by three).

Do you need sounds?

Does your language need a phonemic inventory? It could be gestural (like deaf sign languages) or otherwise non-vocal. It could be an alien language which relies on another sensory channel (perhaps a race of super-ants who communicate with odours and touching). However, these alternative communication methods may require more explanation than can be given in 4,000 words, so you should think carefully before using them.

There is, however, one case where the phonemic inventory of a language need not be addressed: where the language has no living speakers, and no way of associating its written symbolic form with sounds. Some early written languages still have no reliable phonemic inventory.

THE INTERNATIONAL PHONETIC ALPHABET (revised to 2005)

CONSONANTS (PULMONIC)

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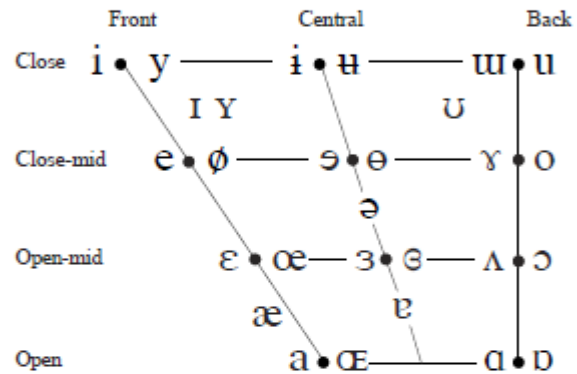
	Bilabial	Labiodental	Dental	Alveolar	Postalveolar	Retroflex	Palatal	Velar	Uvular	Pharyngeal	Glottal
Plosive	p b			t d		ʈ ɖ	c ɟ	k ɡ	q ɢ		ʔ
Nasal	m	ɱ		n		ɳ	ɲ	ŋ	ɴ		
Trill	ʙ			ʀ					ʀ		
Tap or Flap		ⱱ		ɾ		ɽ					
Fricative	ɸ β	f v	θ ð	s z	ʃ ʒ	ʂ ʐ	ç ʝ	x ɣ	χ ʁ	ħ ʕ	h ɦ
Lateral fricative				ɬ ɮ							
Approximant		ʋ		ɹ		ɻ	j	ɰ			
Lateral approximant				l		ɭ	ʎ	ʟ			

Where symbols appear in pairs, the one to the right represents a voiced consonant. Shaded areas denote articulations judged impossible.

CONSONANTS (NON-PULMONIC)

Clicks	Voiced implosives	Ejectives
⦿ Bilabial	ɓ Bilabial	ʼ Examples:
ǀ Dental	ɗ Dental/alveolar	pʼ Bilabial
ǃ (Post)alveolar	ɟ Palatal	tʼ Dental/alveolar
ǂ Palatoalveolar	ɡ Velar	kʼ Velar
ǁ Alveolar lateral	ɠ Uvular	sʼ Alveolar fricative

VOWELS



Where symbols appear in pairs, the one to the right represents a rounded vowel.

OTHER SYMBOLS

- ʍ Voiceless labial-velar fricative
- ɹ Voiced alveolar lateral flap
- ɰ Voiced labial-velar approximant
- ɻ Simultaneous ʃ and x
- ɰ Voiced labial-palatal approximant
- ʎ Simultaneous ɲ and ʝ
- ħ Voiceless epiglottal fricative
- ʕ Voiced epiglottal fricative
- ʡ Epiglottal plosive
- ɕ Alveolo-palatal fricatives
- ɺ Voiced alveolar lateral flap
- ɟɥ Simultaneous ɟ and ɥ

Affricates and double articulations can be represented by two symbols joined by a tie bar if necessary.

kp̚ ts̚

SUPRASEGMENTALS

- ˈ Primary stress
- ˌ Secondary stress
- ː Long
- ˑ Half-long
- ˚ Extra-short
- ◌̥ Minor (foot) group
- ◌̦ Major (intonation) group
- ◌̣ Syllable break
- ◌̤ Linking (absence of a break)

fou̥nəˈtʃən

DIACRITICS Diacritics may be placed above a symbol with a descender, e.g. ɨ̥

◌̥ Voiceless	◌̥ ◌̥	◌̤ Breathy voiced	◌̤ ◌̤	◌̦ Dental	◌̦ ◌̦
◌̦ Voiced	◌̦ ◌̦	◌̧ Creaky voiced	◌̧ ◌̧	◌̨ Apical	◌̨ ◌̨
◌̧ Aspirated	◌̧ ◌̧	◌̨ Linguolabial	◌̨ ◌̨	◌̩ Laminal	◌̩ ◌̩
◌̨ More rounded	◌̨	◌̩ Labialized	◌̩ ◌̩	◌̪ Nasalized	◌̪
◌̩ Less rounded	◌̩	◌̪ Palatalized	◌̪ ◌̪	◌̫ Nasal release	◌̫
◌̪ Advanced	◌̪	◌̫ Velarized	◌̫ ◌̫	◌̬ Lateral release	◌̬
◌̫ Retracted	◌̫	◌̬ Pharyngealized	◌̬ ◌̬	◌̭ No audible release	◌̭
◌̬ Centralized	◌̬	◌̭ Velarized or pharyngealized	◌̭		
◌̭ Mid-centralized	◌̭	◌̮ Raised	◌̮ (ɹ̮ = voiced alveolar fricative)		
◌̮ Syllabic	◌̮	◌̯ Lowered	◌̯ (β̯ = voiced bilabial approximant)		
◌̯ Non-syllabic	◌̯	◌̰ Advanced Tongue Root	◌̰		
◌̰ Rhoticity	◌̰ ◌̰	◌̱ Retracted Tongue Root	◌̱		

TONES AND WORD ACCENTS LEVEL CONTOUR

- ◌̥ or ˥ Extra high
- ◌̦ or ˦ High
- ◌̧ or ˧ Mid
- ◌̨ or ˨ Low
- ◌̩ or ˩ Extra low
- ◌̪ Downstep
- ◌̫ Upstep
- ◌̬ or ˨˨˩ Rising
- ◌̭ or ˨˨˨ Falling
- ◌̮ or ˨˨˨˩ High rising
- ◌̯ or ˨˨˨˩ Low rising
- ◌̰ or ˨˨˨˩ Rising-falling
- ◌̱ Global rise
- ◌̲ Global fall