

CHAPTER

1

Structure of English

STRUCTURE OF ENGLISH

what?
why?
when?
how?

what? Phonemes

22

PHONEME

the smallest unit of spoken language that makes a difference in a word's meaning



SEE ALSO . . .

Chapter 5: Phonological Awareness

Chapter 6: Phonics

Phoneme Categories

Consonant Phonemes

Vowel Phonemes

The English-language alphabet has 26 letters that are used singly and in combination to represent about 42 to 44 different sounds, or phonemes. In Greek, *phon* means “sound”; *eme* means “an element or little piece of something.”

A phoneme is the smallest unit of spoken language that makes a difference in a word's meaning. For example, the phonemes /p/ and /s/ are different; the word *pit* has a different meaning from *sit*. Linguists disagree on the actual number of phonemes, or sounds, in the English language. The number varies according to dialect, individual speech patterns, changes in stress, and other variables.

Consonant Phonemes

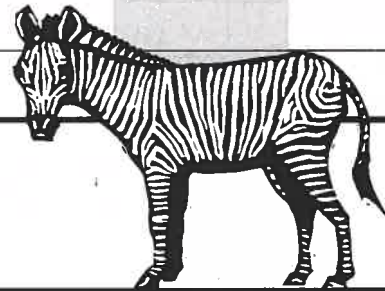
There are about 25 consonant phonemes, or sounds. Some consonant phonemes, such as /p/ and /b/, are represented by a single letter or spelling. Some other consonant phonemes, such as /j/ and /k/, are represented by more than one letter; for example, /j/ can be spelled *j* or *g* and /k/ can be spelled *k* or *c*. Some phonemes, such as /ch/ and /sh/, are represented by two consonant letters that together stand for one sound.

Vowel Phonemes

The vowel letters *a*, *e*, *i*, *o*, and *u* are used singly and in combination to represent the different sounds. Including *r*-controlled vowels, there are about 18 vowel phonemes, or sounds.

Consonant Phonemes (Standard American English)

Phoneme	Key Word	Phoneme	Key Word	Phoneme	Key Word
/b/	bus	/n/	no	/ch/	chair
/d/	dot	/p/	pen	/sh/	shoe
/f/	fan	/r/	red	/zh/	television
/g/	gold	/s/	city, six	/th/	think
/h/	hat	/t/	tent	/TH/	this
/j/	giraffe, jog	/v/	van	/hw/	what
/k/	cat, key	/w/	web	/ng/	wing
/l/	log	/y/	you		
/m/	milk	/z/	zebra		



Vowel Phonemes (Standard American English)

Phoneme	Key Word	Phoneme	Key Word	Phoneme	Key Word
/ā/	take	/i/	rib	/ōō/	good
/ē/	teeth	/o/	pot	/oi/, /oy/	oil
/ī/	tie	/u/	nut	/ou/, /ow/	house
/ō/	rope	/ə/	ago	/ûr/	girl
/a/	bat	/aw/	saw	/är/	art
/e/	egg	/ōō/, /yōō/	tube, cube	/ôr/	or

what?

Consonant Phoneme Classifications

24

10 Most Frequent Consonant Phonemes

/r/, /t/, /n/, /s/, /l/, /k/,
/d/, /m/, /p/, /b/

Hanna et al. 1966.

Consonant sounds may be classified according to place of articulation, manner of articulation, and whether they are voiced or unvoiced. To produce a consonant sound, vocal airflow is either partially or completely obstructed as it moves through the mouth. All consonants are not equally accessible in spoken language (Moats 2005).

Consonant Phoneme Classifications

Place of Articulation

Where in the mouth is the sound produced?

- ▶ Lips closed (bilabial)
- ▶ Upper front teeth on lower lip (labiodental)
- ▶ Tongue between teeth (dental)
- ▶ Tongue on ridge behind upper teeth (alveolar)
- ▶ Tongue against roof of mouth (palatal)
- ▶ Tongue against soft palate in back of throat (velar)
- ▶ Throat open (glottal)

Manner of Articulation

How is the sound produced?

- ▶ **Stops (plosives)** Airflow is stopped completely for a short time.
- ▶ **Nasals** Air is forced through the nasal cavity; mouth is closed.
- ▶ **Fricatives** Air is forced through a narrow space, creating friction.
- ▶ **Affricates** A sequence of a stop and a fricative; airflow is stopped completely and then released.
- ▶ **Glides** glide immediately into the vowel that always follows; airflow is not obstructed.
- ▶ **Liquids** seem to float in the mouth; difficult to produce in isolation or to separate from the preceding vowel sound.

Voiced or Unvoiced Sounds

- ▶ **Voiced** The vocal cords vibrate.
- ▶ **Unvoiced** The vocal cords do not vibrate.

Consonant Phoneme Articulation (<i>boldface phoneme indicates voiced sound</i>)							
Place	Manner	Stops	Nasals	Fricatives	Affricates	Glides	Liquids
	Lips (bilabial)		/b/ /p/	/m/			
Teeth on lip (labiodental)				/v/ /f/			
Tongue between teeth (interdental)				/TH/ /th/			
Ridge behind teeth (alveolar)		/d/ /t/	/n/	/z/ /s/			/l/ /r/
Roof of mouth (palatal)				/zh/ /sh/	/j/ /ch/	/y/	
Back of throat (velar)		/g/ /k/	/ng/			/w/ /hw/	
Throat (glottal)						/h/	

Based on Moats 2005.

Consonant Phonemes	
Continuous Sounds sounds that can be produced for several seconds without distortion	/f/, /l/, /m/, /n/, /r/, /s/, /v/, /w/, /y/, /z/
Stop Sounds sounds that can be produced for only an instant	/b/, /d/, /g/, /h/, /j/, /k/, /p/, /t/

what?

Vowel Phoneme Classifications

26

Vowels are a class of open, unobstructed speech sounds that are not consonants.

— MOATS, 2000

American English has 15 vowel phonemes plus at least three *r*-controlled vowel combinations that are often classified as vowels (Moats 2005). Vowels can be classified according to place of articulation: tongue position (front to back, high to low) and lip position (wide and smiling, rounded and wide open, rounded and partially open). Pronunciation of a vowel may vary according to regional and dialect differences.

Vowel Articulation

Tongue position

Lip position

In the chart on the facing page, vowels are arranged according to their proximity to one another in articulation (Moats 2000, 2005). Beginning with /ē/, the position of the tongue moves from front to back and drops from high to low. Tongue position affects lip position. Lip position changes one step at a time from wide and smiling to rounded and wide open: /ē/, /i/, /ā/, /e/, /a/, /ī/, /o/. After /u/, the lips close slowly until they are rounded and partially open. To see how lip position changes, look in a mirror while saying the vowel sequence in order.

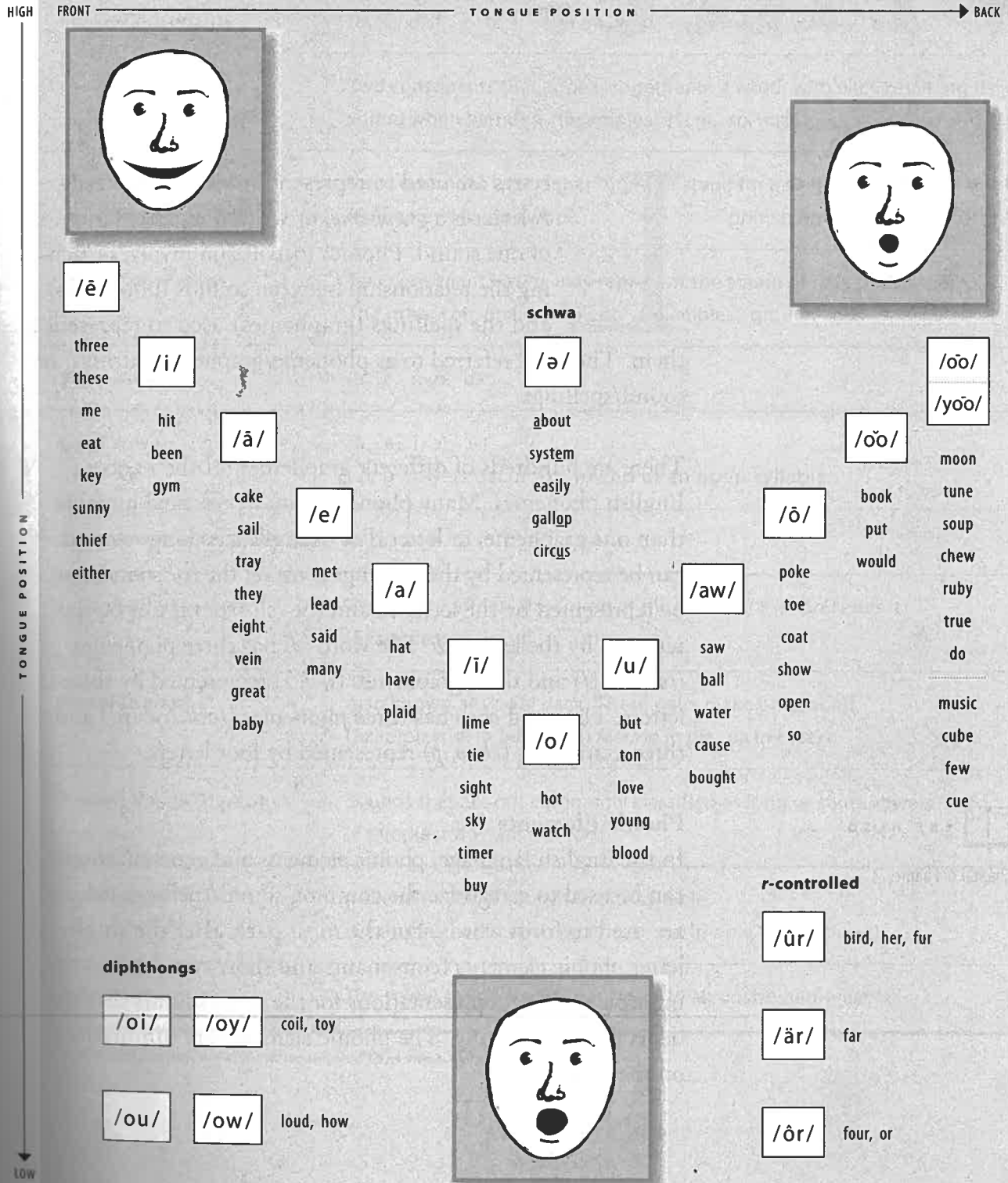
10 Most Frequent Vowel Phonemes

/ī/, /ə/, /a/, /e/, /ō/, /ē/, /ā/, /o/, /ī/, /u/

Hanna et al. 1966.

Some vowel sounds do not fit into the general sequence. A diphthong sound shifts in the middle as the lips change position from the rounded to smile. A schwa (ə) is an indistinct vowel sound—an empty vowel with no identity. In English, the vowel in an unstressed syllable often “reduces” to a schwa. In *r*-controlled vowels, the letter *r* affects the sound of the vowel(s) that precedes it. The vowel(s) may become totally combined with *r* (*bird, her, fur*), may be slightly separated from *r* (*far, for*), or may keep its original sound (*hair, hear, hire*).

Vowel Phonemes



Based on Moats 2005.

what?

Sound/Spellings

28

SOUND/SPELLING

a phoneme/grapheme pairing

Letters are used to represent or stand for sounds. A letter is a *grapheme*, or written representation, of one sound. Phonics instruction involves teaching the relationship between sounds (phonemes) and the spellings (graphemes) used to represent them. These are referred to as phoneme/grapheme pairings, or sound/spellings.

There are hundreds of different graphemes for the 42 to 44 English phonemes. Many phonemes are represented by more than one grapheme, or letter. For example, the long-*e* sound can be represented by the spellings *e*, *ea*, *ee*; the /b/ sound can be represented by the letter *b*; and the /sh/ sound can be represented by the letters *sh*. The word *sat* has three phonemes (/s/ /a/ /t/) and three graphemes (*s*, *a*, *t*) represented by three letters. The word *chop* has three phonemes (/ch/ /o/ /p/) and three graphemes (*ch*, *o*, *p*) represented by four letters.



SEE ALSO . . .

Chapter 6: Phonics

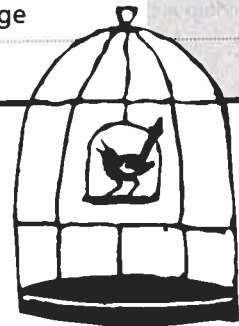
Phonic Elements

In the English language, phonic elements and generalizations can be used to categorize the common sound/spellings, which are used to form words. For the most part, after the single-letter phonic elements (consonants and short vowels), it is the multiple spelling representations for the same sounds that students find challenging. The phonic elements are summarized on the facing page.

Phonic Elements (Sound/Spelling Categories)	
Single Consonants	(b, c, d, f, g, h, j, k, l, m, n, p, q, r, s, t, v, w, x, y, z)
Consonant Blends	Two consonants that appear together in a word, with each retaining its sound when blended. (Examples: fl, gr, sp, mp)
Consonant Digraphs	Two consonant letters that together stand for a single sound. (Examples: sh, th, wh)
Silent Consonants	Two consonant letters may represent the sound of only one of them. The other consonant is "silent." (Examples: gn, kn, wr)
Short Vowels	(a, e, i, o, u)
Long Vowels	(ā, ē, ī, ō, ū) Long vowels occur at the end of an open syllable.
Long Vowels with Silent e	(a_e, e_e, i_e, o_e, u_e)
r-Controlled Vowels	The letter <i>r</i> affects the sound of the vowel(s) that precedes it. (Examples: er, ir, ur, ar, or)
Vowel Digraphs*	Also known as vowel pairs. These pairs make one sound. (Examples: ai in <i>bait</i> , ee in <i>feet</i> , ie in <i>pie</i> , oa in <i>coat</i>)
Variant Vowel Digraphs*	Sounds that are not commonly classified as long or short vowels. (Examples: aw, au, oö, öo)
Diphthongs*	A blend of vowel sounds in one syllable. (Examples: oi in <i>boil</i> , oy in <i>toy</i> , ow in <i>now</i> , ou in <i>cloud</i>)
Schwa (ə)	The vowel sound sometimes heard in an unstressed syllable.

*These vowel pairings are sometimes referred to as *vowel teams*.

Common Consonant Sound/Spellings				
Phoneme	Initial Position*	Key Word	Final Position*	Key Word
/b/	b	bat	b	hub
			bb	ebb
/ch/	ch	chop	ch	beach
	t	future		
			tch	match
/d/	d	day	d	bad
			dd	add
			ed	loved
/f/	f	fat	f	beef
			ff	off
			gh	laugh
			lf	calf
	ph	phone	ph	graph
/g/	g	get	g	big
			gg	egg
	gh	ghost	gh	burgh
			gue	plague
/h/	h	how		
	wh	who		
/hw/	wh	what		
/j/			dge	dodge
	g	gem		
			ge	cage
	j	jump		



*Initial or final position in a syllable
Based on Hanna et al. 1966.

Common Consonant Sound/Spellings

Phoneme	Initial Position*	Key Word	Final Position*	Key Word
/k/	c	cat		
	ch	choir		
			ck	clock
	k	kite		
/l/			lk	walk
	l	let	l	pail
/m/			ll	wall
			lm	calm
	m	mat	m	ham
			mb	lamb
/n/			mn	hymn
	gn	gnat	gn	sign
	kn	knock		
	mn	mnemonic		
	n	net	n	man
/ng/			nn	inn
	n (medial)	bank		
			ng	sing
/p/	p	pet	p	top
/r/	r	rat		
	rh	rhyme		
	wr	write		

* Initial or final position in a syllable
Based on Hanna et al. 1966.



CONTINUED ▷

Common Consonant Sound/Spellings				
Phoneme	Initial Position*	Key Word	Final Position*	Key Word
/s/	c	cent		
			ce	face
	ps	psychology		
	s	sat	s	bus
	sc	scene		
			ss	kiss
/sh/	ci	social		
	sh	shoe	sh	rash
			ssi	mission
	ti	action		
/t/			ed	skipped
	t	tip	t	fit
			tt	putt
/th/	th	thank	th	path
/TH/	th	this	th	bathe
/v/	v	vine		
			ve	love
/w/	w	wave		
/y/	i	senior		
	y	yellow		
/z/			es	goes
			s	has
	z	zoo		
			zz	buzz
/zh/	g	regime		
	s	usual		
	si	fusion		

*Initial or final position in a syllable
Based on Hanna et al. 1966.

Initial Consonant Blend Sound/Spellings							
	Sounds	Spelling	Key Word		Sounds	Spelling	Key Word
L - BLENDS	/bl/	bl	block	S - BLENDS	/sk/	sc	scan
	/cl/	cl	clip		/sk/	sk	skate
	/fl/	fl	flow		/sm/	sm	small
	/gl/	gl	glad		/sn/	sn	snow
	/pl/	pl	plan		/sp/	sp	spell
	/sl/	sl	slap		/st/	st	star
R - BLENDS	/br/	br	brat	3 - LETTER	/sw/	sw	sway
	/cr/	cr	crow		/skr/	scr	scream
	/dr/	dr	drain		/spl/	spl	splash
	/fr/	fr	free		/spr/	spr	spring
	/gr/	gr	green		/skw/	squ	squash
	/pr/	pr	pray		/str/	str	strap
	/tr/	tr	train				

Final Consonant Blend Sound/Spellings					
Sounds	Spelling	Key Word	Sounds	Spelling	Key Word
/kt/	ct	fact	/nd/	nd	bend
/ft/	ft	raft	/nt/	nt	rent
/ld/	ld	wild	/pt/	pt	kept
/lf/	lf	self	/sk/	sk	desk
/lk/	lk	milk	/sp/	sp	crisp
/lp/	lp	help	/st/	st	best
/lt/	lt	quilt			
/mp/	mp	damp			

Common Vowel Sound/Spellings									
/ā/	a (favor)	a_e (late)	ai (bait)	ay (say)	ea (steak)	ei (veil)	ey (they)	eigh (sleigh)	
/ē/	e (me)	ee (feet)	ea (bead)	y (many)	ie (field)	e_e (these)	ey (key)	i_e (machine)	ei (receive)
/ī/	i_e (time)	i (minor)	y (try)	i (mild)	ie (pie)	igh (high)	y_e (type)		
/ō/	o (so)	o_e (hope)	oa (coat)	ow (low)	oe (toe)	ou (soul)	ew (sew)		
/a/	a (sat)	a_e (have)	ai (plaid)						
/e/	e (pet)	ea (head)	ai (said)	a (many)					
/i/	i (six)	y (gym)	e (pretty)	i_e (give)	ee (been)	ui (build)	a_e (senate)		
/o/	o (log)	a (watch)							
/u/	u (but)	o (ton)	o_e (love)	ou (young)					
/ə/	a (alone)	e (system)	i (easily)	o (gallop)	u (circus)				
/ûr/	ur (turn)	ir (girl)	er (her)	or (work)					
/âr/	ar (car)	are (are)	ear (heart)						
/ôr/	or (or)	our (four)	ar (war)						
/aw/	aw (saw)	au (cause)	a[l] (walk)	a[l] (ball)	ough (cough)	augh (caught)			
/oi/ /oy/	oi (boil)	oy (toy)							
/ou/ /ow/	ou (cloud)	ow (now)							
/oo/ (yoo)*	oo (hoot)	u (ruby) (music)*	ue (blue) (cue)*	ew (new) (few)*	u_e (tube) (cube)*	ò (do)	ou (soup)		
/oo/	oo (book)	u (put)	o (wolf)	ou (would)					

Most Frequent English Sound/Spellings

It is useful to know which sound/spellings are important enough to teach and which, because of their lower frequency in words, can be learned on an as-needed basis. The following chart shows the most frequent spellings of the 43 phoneme sounds covered in this book. The percentages provided in parentheses are based on the number of occurrences in which each sound/spelling appeared in the 17,000 most frequently used single and multisyllabic words (Hanna et al. 1966).

Sound/Spelling Frequency			
C O N S O N A N T S			
/b/	b (97%), bb	/TH/ th (100%)	
/d/	d (98%), dd, ed	/hw/ wh (100%)	
/f/	f (78%), ph (12%), ff, lf, gh	/ng/ ng (59%), n (41%)	
/g/	g (88%), gg, gue, gh	V O W E L S	
/h/	h (98%), wh (2%)	/ā/ a (45%), a_e (35%), ai, ay	
/j/	g (66%), j (22%), dg	/ē/ e (70%), ea (10%), ee (10%), e_e, i_e, i, ie	
/k/	c (73%), k (13%), ck, ch	/ī/ i_e (37%), i (37%), y (14%), igh, ie, y_e	
/l/	l (91%), ll	/ō/ o (73%), o_e (14%), oa, ow	
/m/	m (94%), mm, mb, lm, mn	/a/ a (97%), a_e, ai	
/n/	n (97%), nn, kn, gn, mn	/e/ e (91%), ea, a	
/p/	p (96%), pp	/i/ i (68%), y (23%), i_e, a_e	
/r/	r (97%), rr, wr, rh	/o/ o (94%), a	
/s/	s (73%), c (17%), ss, sc	/u/ u (86%), o, ou	
/t/	t (97%), tt (3%), ed	/ə/ o (27%), a (24%), i (22%), e (13%), ou, u	
/v/	v (99.5%)	/ûr/ er (40%), ur (26%), ir (13%)	
/w/	w (92%)	/är/ ar (89%), are, ear	
/y/	i (55%), y (44%)	/ôr/ or (41%)	
/z/	s (64%), z (23%), es, zz	/aw/ a (22%), au (19%), aw (10%), ough, augh	
/ch/	ch (55%), t (31%), tch (11%)	/oi/ oi (62%), oy (32%)	
/sh/	ti (53%), sh (26%), ci, ssi	/ou/ ou (56%), ow (29%)	
/zh/	si (49%), s (33%), g (15%)	/ōo/ oo (38%), u (21%), o, u_e, ou, ew, ue	
/th/	th (100%)	/yoo/ u (69%), u_e (22%), ew, ue	
		/öo/ u (54%), oo (31%), ou, o	

Based on Hanna et al. 1966.

what?

Syllables

36

SYLLABLE

a word or part of a word pronounced as a unit



SEE ALSO . . .

Chapter 8: Multisyllabic Word Reading

A

syllable is a word or part of a word pronounced as a unit. Each syllable contains only one vowel sound. There are six common types of syllables found within English words and four useful principles of syllable division.

Most Useful Syllable Division Principles

Division	Examples	Description
VC/CV	rab•bit nap•kin	Two Consonants Between Two Vowels If two consonants come between two vowels, divide between the consonants. The first vowel sound will be short.
V/CV (75%) VC/V (25%)	mu•sic clos•et	One Consonant Between Two Vowels If a word has one consonant between two vowels, divide the word after the first vowel and give the vowel its long sound. If this division does not produce a recognizable word, then divide the word after the consonant and give the vowel its short sound.
VC/CCV VCC/CV	hun•dred ink•well ath•lete	Three Consonants Between Two Vowels Keep the letters in a consonant blend or digraph together in the same syllable.
Consonant-le	wig•gle ri•fle	Consonant-le Forms a Separate Syllable If the first syllable ends with a consonant, try the short sound for the first vowel. If the first syllable ends with a vowel, try the long sound.

Based on Moats 2005.

Common Types of Syllables		Examples	
Syllable Type	Description	Single Syllable	Multisyllable
Closed	A syllable ending in one or more consonants and having a short-vowel sound spelled with one vowel letter. VC, CVC, CCVC, CVCC	dump fish men	picnic rabbit
Open	A syllable ending with a long-vowel sound spelled with one vowel letter. CV, CCV	me she	robot veto
Vowel Combination	A syllable with a short-vowel, long-vowel, or diphthong sound spelled with a vowel combination, such as <i>ai</i> , <i>ea</i> , <i>ee</i> , <i>oi</i> , or <i>oo</i> . CVVC, CCVVC, CVVCC	boil bread rain spoon teeth	baboon canteen complain heavy poison
r-Controlled	A syllable containing a letter combination made up of a vowel followed by the letter <i>r</i> , such as <i>ar</i> , <i>er</i> , <i>ir</i> , <i>or</i> , and <i>ur</i> . The vowel- <i>r</i> combination is one welded sound that cannot be segmented.	far fern first for fur	perfect purchase snorkel target thirsty
Vowel-Consonant e	A syllable with a long-vowel sound spelled with one vowel letter followed by one consonant and a silent <i>e</i> . VCe, CVCe, CCVCe	fuse hide mole Pete race	amuse erase provide stampede tadpole
Consonant-<i>le</i>	A final, separate syllable containing a consonant followed by the letters <i>le</i> .	NA	apple table

Most Common Syllables in the Most Frequent English Words

ing	er	i	y	de	en	u	per
ly	ed	tion	ter	com	an	ti	to
es	re	e	ex	o	ty	ri	
in	a	con	al	di	ry	be	

Based on Sakiey et al. 1980.

what?

Onset-Rime

38

ONSET-RIME

the two parts of a syllable



SEE ALSO . . .

Levels of Phonological Awareness, p. 117

A syllable has two parts: the onset and the rime. The onset is the part of the syllable that comes before the vowel. It may be a consonant, consonant blend, or digraph. The rime is the vowel and everything after it. For example, in the one-syllable words *sing*, *bring*, and *thing*, the rime is *-ing* and the onsets are *s*, *br*, and *th*. Since the rime contains the vowel, all syllables have a rime. However, all syllables do not have an onset; for example, *I*, *it*, and *out*.

Onset and Rime

Word	Onset	Rime
I	-	I
it	-	it
out	-	out
sing	s	ing
bring	br	ing
thing	th	ing

PHONOGRAM

nonlinguistic term for rime

Phonograms

Phonogram is a nonlinguistic term sometimes substituted for rime. In the word *back*, *-ack* is the phonogram; it is also the rime.



SEE ALSO . . .

Phonograms, p. 186

A relatively small number of phonograms can be used to generate a large number of words. Wylie and Durrell (1970) point out that nearly 500 primary-grade words can be derived from only 37 “rhyming” phonograms.

Phonograms				
ack	ail	ain	ake	ale
ame	an	ank	ap	ash
at	ate	aw	ay	eat
ell	est	ice	ick	ide
ight	ill	in	ine	ing
ink	ip	ir	ock	oke
op	ore	or	uck	ug
ump	unk			

Based on Wylie and Durrell 1970.

Phonograms

ack: back, black, crack, flack, hack, jack, knack, lack, pack, quack, rack, sack, slack, stack, tack, track

ail: bail, fail, frail, grail, hail, jail, mail, nail, pail, quail, rail, sail, snail, tail, trail, wail

ain: brain, chain, drain, gain, grain, lain, main, pain, plain, rain, slain, sprain, stain, strain, swain, train, twain, vain

ake: bake, brake, cake, drake, fake, flake, lake, make, quake, rake, sake, shake, snake, stake, take, wake

ale: bale, gale, hale, kale, male, pale, sale, scale, shale, stale, tale, vale, wale, whale

ame: blame, came, fame, flame, frame, game, lame, name, same, shame, tame

an: ban, bran, can, clan, fan, man, pan, plan, ran, scan, span, tan, than, van

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Phonograms

ank: bank, blank, clank, crank, dank, drank, flank, frank, lank, plank, prank, rank, sank, shank, spank, stank, swank, tank, thank, yank

ap: cap, chap, clap, flap, gap, lap, map, nap, pap, rap, sap, scrap, slap, snap, strap, tap, trap, wrap, yap, zap

ash: bash, brash, cash, clash, crash, dash, flash, gash, gnash, hash, lash, mash, rash, sash, slash, smash, splash, stash, thrash, trash

at: bat, brat, cat, chat, drat, fat, flat, gnat, hat, mat, pat, rat, sat, scat, slat, spat, sprat, that, vat

ate: crate, date, fate, gate, grate, hate, late, mate, pate, plate, rate, skate, slate, spate, state

aw: caw, claw, crawl, draw, flaw, gnaw, haw, jaw, law, maw, paw, raw, saw, slaw, squaw, straw, taw, thaw, yaw

ay: bay, bray, cray, day, flay, fray, gay, gray, hay, jay, lay, may, nay, pay, play, pray, quay, ray, say, slay, spay, splay, spray, stay, stray, sway, tray, way



Phonograms

eat: beat, bleat, cheat, cleat, eat, feat, heat, meat, neat, peat, pleat, seat, teat, treat, wheat

ell: bell, cell, dell, fell, hell, jell, knell, quell, sell, shell, smell, spell, swell, tell, well, yell

est: best, blest, chest, crest, fest, guest, jest, nest, pest, quest, rest, test, vest, west, zest

ice: dice, lice, mice, nice, price, rice, slice, spice, splice, thrice, trice, twice, vice

ick: brick, chick, click, crick, flick, hick, kick, lick, nick, pick, prick, quick, sick, slick, stick, thick, tick, trick, wick

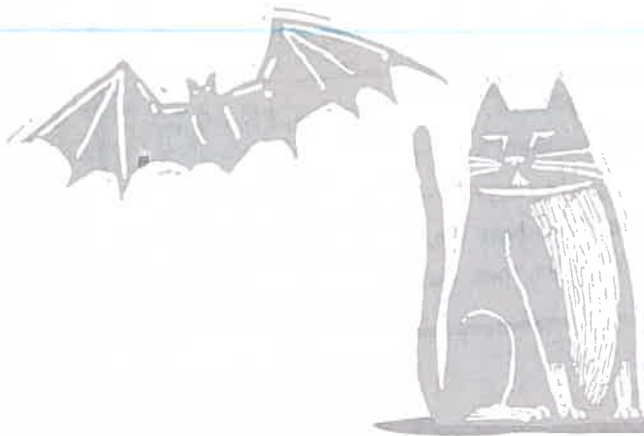
ide: bide, bride, chide, glide, hide, pride, ride, side, slide, snide, stride, tide, wide

ight: blight, bright, fight, flight, fright, knight, light, might, night, plight, right, sight, slight, tight

ill: bill, chill, dill, drill, fill, gill, grill, hill, kill, mill, pill, quill, shrill, sill, skill, spill, still, thrill, till, will

in: bin, chin, din, fin, gin, grin, kin, pin, shin, sin, skin, spin, tin, thin, win

ine: brine, dine, fine, line, mine, nine, pine, shine, spine, swine, tine, thine, vine, wine



Phonograms

ing: bring, cling, ding, fling, king, ping, ring, sing, sling, spring, sting, string, swing, thing, wing, zing

ink: blink, brink, clink, drink, fink, ink, kink, link, mink, pink, rink, sink, slink, stink, think, wink

ip: blip, chip, clip, dip, drip, flip, grip, hip, kip, lip, nip, pip, quip, rip, ship, sip, skip, slip, strip, tip, trip, whip, zip

ir: fir, sir, stir, whir

ock: block, chock, clock, cock, crock, dock, flock, frock, hock, jock, knock, lock, mock, pock, rock, shock, smock, sock, stock

oke: bloke, broke, choke, coke, joke, poke, smoke, spoke, stoke, stroke, woke, yoke

op: cop, chop, crop, drop, flop, fop, glop, hop, lop, mop, plop, pop, prop, shop, slop, sop, stop, top



Phonograms

ore: bore, chore, core, fore, gore, lore, more, pore, score, shore, snore, sore, spore, store, swore, tore, wore, yore

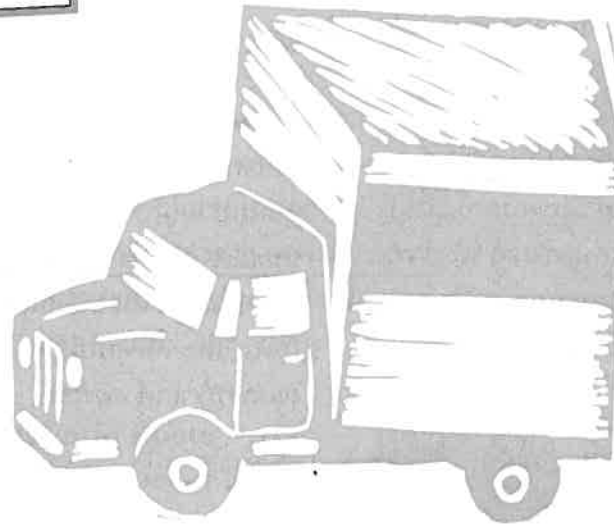
or: for, nor

uck: buck, chuck, cluck, duck, luck, muck, pluck, puck, shuck, snuck, struck, stuck, suck, truck, tuck

ug: bug, chug, drug, dug, hug, jug, lug, mug, plug, pug, rug, slug, smug, snug, thug, tug

ump: bump, chump, clump, dump, frump, grump, hump, jump, lump, plump, pump, rump, slump, stump, sump, thump, trump

unk: bunk, chunk, clunk, dunk, drunk, flunk, funk, hunk, junk, lunk, punk, skunk, slunk, spunk, stunk, sunk, trunk



what?

Morphemes

42

MORPHEMES

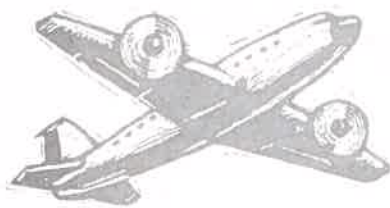
word-part clues; the meaningful parts of words

- root words
- prefixes
- suffixes
- Greek and Latin roots



SEE ALSO . . .

Morphemic Analysis, p. 490



Morphemes are the meaningful parts of words. They are often referred to as word-part clues. In Greek, *morphos* means “form or structure”; *eme* means “an element or little piece of something.” The majority of morphemes in English came from one of three ancient languages: Greek, Latin, or Anglo-Saxon. A morpheme may be one syllable (*pig*) or more than one syllable (*elephant*). It may be a whole word or a part of a word. There are two basic types of morphemes: *free* and *bound*. *Free morphemes* can stand alone as words; they do not have to be combined with other morphemes to make words. *Bound morphemes* must be attached to, or “bound” to, other morphemes to make words.

Anglo-Saxon Root Words

Anglo-Saxon root words are free morphemes. A root word, or base word, is a single word that cannot be broken into smaller words or word parts. Anglo-Saxon root words are words from which many other words are formed.

COMPOUND WORDS Compound words are composed of two Anglo-Saxon root words. The meaning of some compound words can be derived from the meanings of the two smaller words that comprise them: for example, *doghouse* and *bluebird*. Other compound words have a meaning that differs from the meaning of the two smaller words: for example, *butterfly* and *airline*.

Types of Morphemes	
Free Morphemes Can stand alone as words	Anglo-Saxon root words: <i>help, play, run</i>
Bound Morphemes Cannot stand alone as words	<ul style="list-style-type: none"> • Prefixes: <i>dis-, in-, re-, un-</i> • Derivational suffixes: <i>-ful, -less, -ly</i> • Inflectional suffixes: <i>-ed, -es, -ing, -s</i> • Greek roots: <i>bio, graph, scope</i> • Latin roots: <i>dict, ject, struct</i>

Affixes

Affixes are bound morphemes. This group of word parts includes prefixes and two kinds of suffixes: derivational and inflectional.

PREFIXES Prefixes are word parts that are “fixed” to the beginning of root words. They usually alter the meaning of the root word to which they are attached.

DERIVATIONAL SUFFIXES Derivational suffixes are word parts that are “fixed” to the end of root words. Like prefixes, they usually alter the meaning of the root word to which they are attached. It may also change the root word’s part of speech, pronunciation, or spelling.

INFLECTIONAL SUFFIXES Inflectional suffixes, or endings, are word parts that are “fixed” to the end of root words. They usually change the form of a root word but not its part of speech. If the root word is a noun, the suffix may show possession (*hers*), or plurality (*boxes*). If the root word is a verb, the suffix may show tense (*walked*), active or passive voice (*it was driven*), or state (*she had been singing*). If the root word is an adjective, the suffix may show comparison (*louder, loudest*).

Greek and Latin Roots

Greek and Latin roots are also bound morphemes. Most Greek roots appear in combination with each other. Most Latin roots appear in combination with one or more affixes.

dis- in-
re- un-

-ful -less
-ly

-ed -es
-ing -s

dict ject
struct

Most Frequent Prefixes in Academic Words			
Prefix	Meaning(s)	Example Words	Rank
con-* (co-, col-, com-, cor-)	with, together	concept, cohort, collect, complex, corrupt	1
in-* (il-, im-, ir-)	in, on; not	income, illustrate, impeach, irregular	2
re-	back, again	recite, reflect, reverse	3
ad-* (ac-, ach-, af-, ag-, al-, ap-, ar-, as-, at-)	toward, in, near	adjust, accept, achieve, affix, aggression, allege, appear, arrest, assign, attack	4
de-	down, away from	debark, decompose	5
dis-* (di-, dif-)	not, absence of, apart	disable, divide, different	6
ex-	out	excerpt, export	7
un-	not, opposite	unequal, unfit	8
e-	out	eliminate, erase	9
pro-	forward, prior to	process, promote	10
sub-* (suc-, suf-, sup-, sus-)	under, beneath; secondary	subdivision, success, suffrage, supply, suspense	11
pre-	before	predict, preview	12
inter-* (intel-)	between, among	interact, intelligent	13
ob-* (oc-, of-, op-)	down, against, facing; to	observe, occupy, offer, oppose	14
trans-	across, beyond	translate, transport	15
a-	on, in; to; not, without	about, among	16
per-	through, completely	perfume, perplex	17
en-	to cause to be	enforce, enable	18
non-	not	nonfat, nonstop	19
ab-	away, from	absence, abnormal	20

* Most common spelling

Based on Lane, Gutlohn, and van Dijk 2019.

Most Frequent Derivational Suffixes in Academic Words

Suffix	Meaning(s)	Example Words	Rank
-al	relating to	elemental, medicinal	1
-ation	act of, state of	corporation, graduation	2
-ion (-sion, -tion*)	act of, state of	opinion, erosion, nation	3
-ic	nature of, like	atomic, graphic	4
-ate	cause, make	candidate, estimate	5
-ly	like, manner of	lonely, wisely	6
-ive	causing, making	collective, negative	7
-ity	state of, quality	density, identity	8
-able* (-ible)	able, can do	enjoyable, flexible	9
-ize	to make	criticize, verbalize	10
-ment	act of, state of	experiment, judgment	11
-ism	characteristic, manner, condition	feminism, racism	12
-er	one who, that which	swimmer, computer	13
-ent	someone who, something that	student, accident	14
-or	one who, that which	instructor, radiator	15
-ary	relating to; place where	elementary, glossary	16
-ist	one who	capitalist, tourist	17
-y	inclined to, tend to	greedy, tricky	18
-ure (-ture*)	state of, process, function	failure, future	19
-ant	an action or state	consultant, tolerant	20
-logy	study of	ecology, technology	20

* Most common spelling

Based on Lane, Guslohn, and van Dijk 2019.

Common Latin Roots					
Root	Meaning	Example	Root	Meaning	Example
aud	hear	audible	man	hand	manual
bene	well, good	benefit	mem	mind	memory
centi	hundred	centipede	migr	move	migrate
contra	against	contrary	mit, miss	send	submit/mission
cred	believe, trust	credible	ped	foot	pedal
dict	tell	dictate	pop	people	popular
duct	lead	conduct	port	carry	transport
equi	equal	equitable	rupt	break	erupt
extra	outside	extravagant	sign	mark	signal
fac	make	factory	spect	see	inspect
fig	form	figure	sta/stat	stand	statue
flec	flex, bend	flexible	struct	build, form	construct
form	shape	formulate	trac/tract	pull	tractor
fract	break	fracture	urb	city	suburb
init	beginning	initial	vid/vis	see	video/visible
ject	throw	reject	voc	voice	vocal
junct	join	junction	volv	roll	revolve



migr - move - migrate

Common Greek Roots

Root	Meaning	Example	Root	Meaning	Example
amphi	both	amphibian	micro	small	microscope
astro	star	astronaut	mono	single	monorail
auto	self	automatic	ology	study of	morphology
biblio	book	bibliography	opt	eye	optical
bio	life	biology	para	beside	parallel
chron	time	chronic	phil	love	philosophy
geo	earth	geology	phon	sound	phonograph
graph	write, record	autograph	photo/phos	light	photograph
hemi	half	hemisphere	pod	foot	podiatrist
hydr	water	hydraulic	psych	mind, soul	psychic
hyper	over	hyperactive	scope	see	microscope
ist	one who	dentist	sphere	ball	hemisphere
logo	word, reason	logic	syn	together	synonym
macro	large	macrobiotic	tele	from afar	telephone
mech	machine	mechanic	therm	heat	thermometer
meter	measure	barometer			



astro - star - astronaut



opt - eye - optical