Learn the International Phonetic Alphabet (IPA)

Spelling and Sounds – Consonant Clusters

A consonant cluster is a group of two or more consonant letters together in a word. For example, in the word "**brilliant**", "br" is a consonant cluster, as is "II", and also "nt". Consonant clusters are also sometimes known as "consonant blends". Focusing on consonant clusters and vowel clusters (see p.18.48) is useful if you want to look at some of the differences between spelling and sounds in English words.

Consonant clusters can occur at the beginning (an **initial** consonant cluster), in the middle (a **medial** consonant cluster) or at the end of a syllable (a **final** consonant cluster). For example, in the world brilliant – /'bril.jənt/ – which has two syllables, there is a consonant cluster at the beginning of the first syllable ("br"), at the end of the first syllable ("ll"), and at the end of the second syllable ("nt"). They can also occur in the middle of a syllable, for example the consonant cluster "ch" in the middle of the word "a**ch**e".

We can include consonant *digraphs* within the term "consonant clusters". A consonant digraph is where two consecutive consonant letters in the spelling of a word are used together to make a single sound. For example, in the word "**kn**ow", "kn" is a digraph which represents a single sound: /n/. There are also digraphs which make vowel sounds, for example, in the word "beach", "ea" is a digraph which represents a single vowel sound: /ir/ (see p.18.48).

There are 21 consonant *letters* in the English alphabet, and 25 consonant *sounds* in spoken English. Therefore we need some consonant digraphs to represent consonant sounds because there are more consonant sounds than consonant letters. For example, there is no single letter in English that represents the sound /J/. We need to use a digraph – two consonant letters together – and we end up with "sh" to represent /J/. Similarly, there is no single letter that represents the sound $/\delta/$. Therefore we need to use a digraph – two consonant letters together – and we end up with "th" to represent $/\delta/$. Confusion can occur because the digraph "th" also represents another, different consonant sound: $/\theta/$.

Part of the reason for the existence of digraphs – where two letters make one sound – is that English is an old language, and over hundreds of years the pronunciation of different words has changed. Some sounds that used to be pronounced in words are no longer pronounced, although the spelling has remained the same. Some used to be pronounced, but aren't any more. For example, up until the mid-17th century "knife" was pronounced in Old English as a three-syllable word, with the /k/, the /n/, and the final vowel sound all heard, like this: /k'nif.ə/.

As we have seen in our study of connected speech (see p.11.1), consonants don't like to rub up against each other, and elision (where we lose a consonant sound) or assimilation (where a consonant sound changes) often occur when two consonant sounds meet, to make the syllable or word easier to pronounce. So it is no surprise then that the longer the consonant cluster, the more difficult it will be to pronounce, and the more likely it will be that either elision or assimilation take place. For example, try saying: "twelfths" out loud. This word crowbars seven different consonant letters into one syllable, which in turn produces six distinct consonant sounds: $/t w e lf \theta s / !$ Another example of a problematic word is "crisps", which is pronounced: /krisps / . Try to pronounce all of the five distinct consonant sounds (in two consonant clusters) in just one syllable. Tricky!

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Spelling and Sounds – Consonant Clusters

Generally speaking most consonant clusters are only two or three letters long. The longest initial consonant cluster can be three letters long, e.g. "spr-" in the word "**spr**int", whilst the longest final consonant cluster will be generally four letters long, e.g. "-rsts" in the word "**irsts**". Perhaps the prize for the longest consonant cluster would have to go to the word "**rhythm**", which is soley made up of consonant letters – six to be precise! However, "rhythm" cheats as a consonant cluster, because it actually has two vowel sounds – the "y" acts as the vowel sound /I/ in the first syllable, which is stressed, and the second syllable can have either the schwa sound (weak stress) or no vowel sound: /'rɪð.əm/ or /'rɪð.m/.

Adverbs are a group of words that can have long consonant clusters at the end, e.g. exactly. Elision is likely to occur in such a cluster, for example "exactly" will often be pronounced without the /t/ sound, like this: /ɪg'zæk.li/ rather than /ɪg'zækt.li/. It would be too much unnecessary effort to try to pronounce the /t/, sandwiched as it is between two other consonant sounds. I say *unnecessary* because the most important sound in this word is the vowel sound on the stressed syllable, the /a/ sound. This sound *must* be pronounced clearly, whilst the consonant sounds are less vital to communication.

Consonant clusters can be divided into **five** categories:

- 1. Consonant Digraphs
- 2. Consonant Digraphs with Double Letters
- 3. True Consonant Clusters
- 4. Consonant Clusters Ending with /s/ or $\,/z/$
- 5. Consonant Clusters in Compound Words

1. Consonant Digraphs

Some consonant clusters are *digraphs*, which are two letters together in the spelling of a word that combine to make a single sound. Note that most consonant digraphs end with the letter "**h**". (When three letters come together to form a single sound, e.g. "-tch" in the word "fe**tch**" – which represents the sound $/t \int / -$ it is known as a *trigraph*.)

Here are some examples of **initial** consonant digraphs. (Note: you may wish to add your own examples in the space provided.)

digraph:	sounds like:	for example:	my example(s):
ch	/t∫/	cheer, champion, change	
ch	/∫/	ch andelier, ch ampignon ¹	
ch	/k/	cholera, chrome, chronic	
gn	/n/	gnat, gnaw, gnome	
kn	/n/	know knife knitting	
kn	/n/	know, knife, knitting	

¹ Loan words from French.

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Spelling and Sounds – Consonant Clusters

	161		1
ph	/f/	ph oto, ph armacy, ph araoh	
.			
rh	/r/	rhubarb, rhinoceros, rhyme	
Г			
SC	/s/	science, scissors, scimitar	
sh	/∫/	sheep, shine, shock, shed	
th	/0/	thick, Thursday, thanks	
th	/ð/	this, that, brother, there, the	
ts	/s/	ts unami ¹	
wh	/w/	what, why, where, wheel, whip)
wh	/h/	who, whose, whole, wholemea	l
wr	/ r /	writing, wrestler, wrong	
Here are som	ne examples of fir	nal consonant cluster digraphs:	
		nal consonant cluster digraphs:	
Here are son digraph:	ne examples of fir sounds like:		my example(s):
digraph:	sounds like:	nal consonant cluster digraphs: for example:	my example(s):
<i>digraph:</i>	sounds like: /t∫/	nal consonant cluster digraphs: for example: bea ch , coa ch , roa ch	my example(s):
digraph:	sounds like:	nal consonant cluster digraphs: for example:	my example(s):
<i>digraph:</i> ch ch	sounds like: /t∫/ /k/	hal consonant cluster digraphs: for example: beach, coach, roach stomach	my example(s):
<i>digraph:</i>	sounds like: /t∫/	nal consonant cluster digraphs: for example: bea ch , coa ch , roa ch	my example(s):
<i>digraph:</i> ch ch ck	sounds like: /t∫/ /k/ /k/	hal consonant cluster digraphs: for example: beach, coach, roach stomach black, track, pick, flock, luck	
<i>digraph:</i> ch ch	sounds like: /t∫/ /k/	hal consonant cluster digraphs: for example: beach, coach, roach stomach	
<i>digraph:</i> ch ch ck gh	sounds like: /tʃ/ /k/ /k/ /f/	hal consonant cluster digraphs: for example: beach, coach, roach stomach black, track, pick, flock, luck cough, trough, rough, enough,	
<i>digraph:</i> ch ch ck	sounds like: /t∫/ /k/ /k/	hal consonant cluster digraphs: for example: beach, coach, roach stomach black, track, pick, flock, luck	
digraph: ch ch ck gh mb	sounds like: /tʃ/ /k/ /k/ /f/ /m/	hal consonant cluster digraphs: for example: beach, coach, roach stomach black, track, pick, flock, luck cough, trough, rough, enough, comb, tomb, aplomb, plumb	
<i>digraph:</i> ch ch ck gh	sounds like: /tʃ/ /k/ /k/ /f/	hal consonant cluster digraphs: for example: beach, coach, roach stomach black, track, pick, flock, luck cough, trough, rough, enough,	
digraph: ch ch ck gh mb ng	sounds like: /tʃ/ /k/ /k/ /f/ /m/ /ŋ/	hal consonant cluster digraphs: for example: beach, coach, roach stomach black, track, pick, flock, luck cough, trough, rough, enough, comb, tomb, aplomb, plumb along, going, eating, meeting	
digraph: ch ch ck gh mb	sounds like: /tʃ/ /k/ /k/ /f/ /m/	hal consonant cluster digraphs: for example: beach, coach, roach stomach black, track, pick, flock, luck cough, trough, rough, enough, comb, tomb, aplomb, plumb	
digraph: ch ch ck gh mb ng sh	sounds like: /tʃ/ /k/ /k/ /f/ /m/ /ŋ/ /ʃ/	hal consonant cluster digraphs: for example: beach, coach, roach stomach black, track, pick, flock, luck cough, trough, rough, enough, comb, tomb, aplomb, plumb along, going, eating, meeting finish, trash, Spanish, fish	
digraph: ch ch ck gh mb ng	sounds like: /tʃ/ /k/ /k/ /f/ /m/ /ŋ/	hal consonant cluster digraphs: for example: beach, coach, roach stomach black, track, pick, flock, luck cough, trough, rough, enough, comb, tomb, aplomb, plumb along, going, eating, meeting	

 ¹ This is a loan word from Japanese. There are no other words in English that begin with "ts".
² The digraph "gh" also contributes towards different vowel sounds, e.g. /ao/ in "bough" and "plough", and can be included in various vowel clusters (see p.18.53).

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Spelling and Sounds – Consonant Clusters

Here are some **final** consonant digraphs which occur where the letter "r" is silent because it is helping to make a vowel sound (see also **vowel clusters** on p.18.50).

digraph:	sounds like:	for example:	my example(s):
rb	/b/	distu rb , subu rb , rhuba rb	
rn	/n/	earn, turn, western, learn	
rt	/t/	hurt, heart, art, start, alert	

Just to confuse you, here's a consonant cluster where "r" *is* pronounced. This is not a digraph, because both of the letters are pronounced, but rather a true consonant cluster:

c/cluster:	sounds like:	for example:	my example(s):
ry	/ri/	dai ry , ee ry , dia ry , hai ry , bu ry	

2. Consonant Digraphs with Double Letters

These consonant clusters are digraphs that comprise a pair of identical letters, which make a single sound when said together. Most consonant letters can be doubled, although doubles with "h", "j", "q", "w", "x", and "y" are not natural in English. They usually occur in the middle of a word, although some, like "ff" in "cliff" come at the end. They never occur at the beginning of a word, unless the word has originated from a foreign language, for example "Ilama" from Spanish or "Lloyd" from Welsh. Here is a full list of consonant digraphs with double letters:

digraph:	sounds like:	for example:	my example(s):
bb	/b/	ro bb er, so bb ing, ho bb le	
CC	/k/	so cc er, o cc ur, stu cc o	
dd	/d/	pu dd ing, we dd ing, sa dd er	
ff	/f/	iffy, cliff, effect, off, effort	
gg	/g/	bo gg y, fla gg ed, bi gg er	
kk	/k/	tre kk ing, Tre kk er	
II	/1/	alluring, allied, balloon	
mm	/m/	su mm er, hu mm ing, i mm ature	
nn	/n/	ru nn er, a nn oy, a nn ouncement	
рр	/p/	o pp ortunity, sho pp ing, ki pp er	
rr	/r/	hu rr y, wo rr ied, cu rr y, so rr y	
SS	/s/	a ssess , le ss , ma ss ive	
SS	/z/	po ss ess	
tt	/t/	shutters, cottage, plotted	
VV	/v/	revved	

Learn the International Phonetic Alphabet (IPA)

Spelling and Sounds – Consonant Clusters

3. True Consonant Clusters

"True" consonant clusters are phonetic because they are pronounced in the same way as they are spelled. For example, "br" in "**br**ead" is pronounced in the same way as the phonemes that it represents: /br/. In true consonant clusters we pronounce all of the sounds. Note that the consonant clusters below in **bold type** are all good examples of when the consonant sound /r/ is pronounced in an English word. This is helpful to know, because so often in spoken English the letter "r" in a word is not pronounced, since it's only there to help make a vowel sound, for example in the words: "c**ar**", "m**ore**", and "y**our**" (see also p.18.50).

Here are some examples of true initial consonant clusters:

c/cluster:	sounds like:	for example:	my example(s):
bl	/bl/	blood, blend, black, blown	
br	/br/	bright, bring, brush, brilliant	
cl	/kl/	clear, close, clothes, clever	
cr	/kr/	cr y, cr ime, cr ow, cr op, cr umb	
dr	/dr/	drink, drop, drive, drip, dreary	
fl	/fl/	flannel, fly, fleece, flame, flow	
fr	/fr/	frighten, from, frame, France	
gr	/gr/	great, grape, grip, grime, grow	
pr	/pr/	prove, provide, pray, princess	
qu	/kw/	qu ite, qu een, qu ick, qu iet ¹	
scr	/skr/	scream, script, scram, screw	
sm	/sm/	sm all, sm art, sm elly, sm ooth	
st	/st/	stay, stop, stink, stolen, sty	
str	/str/	strange, stroppy, street, strict	
tr	/tr/	tropical, trench, train, triumph	

Here are some examples of true **final** consonant clusters:

c/cluster:	sounds like:	for example:	my example(s):
ly	/li/	only, lonely, truly, rarely	
mp	/mp/	hu mp , bu mp , cla mp , da mp	
mpt	/mpt/	exe mpt , conte mpt , drea mpt	
nch	/nt∫/	mu nch , lu nch , be nch , ste nch	
nd	/nd/	e nd , sta nd , me nd , grou nd	
ndy	/ndi/	wi ndy , ca ndy , ha ndy , sa ndy	
ny	/ni/	ti ny , mea ny	

...and here are a couple that are neither initial nor final consonant clusters:

¹ Although "qu" is technically a consonant and a vowel together, the sounds that it produces -/kw/ – are both consonant sounds.

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Spelling and Sounds – Consonant Clusters

c/cluster:	sounds like:	for example:	my example(s):
lv ng		salvage, delve, shelves ora ng e, arra ng e, impi ng e	

4. Consonant Clusters Ending with /s/ or /z/

These are consonant clusters that end with an "s", representing either the sound /s/ or /z/ at the end of a plural noun, for example:

c/cluster: so	ounds like:	for example:	my example(s):
rds /d rs /z	lz/ z/	plants, accounts, rents records, birds, cards, chords colours, rivers, sisters sweets, oats, boats	

We've already seen earlier on in this handbook how adding an "s" sound - /s/ -or a "z" sound - /z/ -at the end of a word makes it easier for us to say the next sound if it's a consonant sound (see p.3.9). The importance of /s/ and the very similar /z/ as linking sounds in connected speech in English cannot be overstated. These linking sounds occur very frequently in English because of grammar rules to do with using "s". If you think about it, we use "s" as a letter at the end of words far more frequently than we do other letters, simply because of the following grammar rules:

- 1. "s" is added to the end of most nouns to make them plural, e.g. "one cat, two cats", or "one knife, two knives"
- 2. "s" is added to the end of nouns (after an apostrophe) to indicate possession, e.g. "John's car", or "the girl's book"
- 3. "s" is added to the end of verbs to make the third form, e.g. "I read, he reads", or "you put", "she puts". It is also worth noting the "s" endings of the third form of the four most common verbs in English (the first three of which are also very common auxiliary verbs):

Verb:	BE		
Third Form	: he i s , she i s , it i s	and the contractions	he' s , she' s , it' s
Verb:	HAVE		
Third Form	: he ha s , she ha s , it ha s	and the contractions	he' s , she' s , it' s
Verb:	DO		
Third Form	: he doe s , she doe s , it do	De s	

Learn the International Phonetic Alphabet (IPA)

Spelling and Sounds – Consonant Clusters

Verb: GO

Third Form: he goes, she goes, it goes

Can you imagine what would happen if we used /t/ instead of /s/ or /z/ as a linking sound in each of these situations? The consonant sound /t/ is often dropped at the ends of words (see p.11.5), because it is difficult to pronounce together with another consonant sound. If we used it in the above rules instead of /s/ or /z/ (which connect well with all other consonant sounds) the phrases produced would be much harder to say, because they wouldn't flow together well. For example, we would have to say: "John't car", instead of "John's car", which would make a problem because the /t/ sound at the end of "John't" wouldn't flow well with the next consonant sound (the /k/ sound at the beginning of "car"). Or what about "she't going", instead of "she's going"? Again, it would be much harder to pronounce. In fact the result would be tongue-twisting on a massive scale! In the same way, having to pronounce "he readt bookt", instead of "he reads books" wouldn't flow, because /t/ – or indeed any other consonant sound – wouldn't enable the same easy flow that we achieve by using /s/ or /z/.

5. Consonant Clusters in Compound Words

In compound words, strange consonant clusters can occur, which are not "true" consonant clusters. This is because two separate words have been joined together to make a new word, meaning that the final consonant cluster from the first word has to sit side by side with the initial consonant cluster from the second word. Here are some examples:

c/cluster:	sounds like:	for example:	the two words are:
tchb	/t∫b/	swi tchb oard	switch + board
ffh	/fh/	cliff h anger	cliff + hanger
ndf	/ndf/	gra ndf ather	grand + father
ndbr	/ndbr/	grou ndbr eaking	ground + breaking

As we have seen, it is common when consonant sounds meet for elision or assimilation to take place (see also Connected Speech, p.11.4). So, for example, we wouldn't pronounce the whole mouthful of consonant sounds in the middle of "groundbreaking": /ˈgrɑond.brei.kiŋ/, because it would be too difficult in rapid speech to pronounce the final consonant cluster "-nd" next to the initial consonant cluster, "br". On the contrary, we would automatically employ elision and lose the /d/ sound, changing the word into: "groun-breaking" /ˈgrɑon.brei.kiŋ/ – which is far easier to pronounce.

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Spelling and Sounds - Common Consonant Clusters

A consonant cluster is a group of two or more consonant letters together in a word. They can be **initial** (at the beginning of a word), **medial** (in the middle of a word), and **final** (at the end of a word). Focusing on consonant clusters and vowel clusters (see p. 18.48) is useful if you want to look at some of the differences between spelling and sounds in English words. Consonant clusters can be divided into five categories:

1. Consonant Digraphs (two consonant letters together make a single sound) - INITIAL:

digraph:	sounds like:	for example:	my example(s):
ch	/t∫/	cheer, champion, change	
gn	/n/	gn at, gn aw, gn ome	
kn	/n/	kn ow, kn ife, kn itting	
ph	/ f /	ph oto, ph armacy, ph araoh	
SC	/s/	science, scissors, scimitar	
sh	/∫/	sheep, shine, shock, shed	
th	/0/	thick, Thursday, thanks	
th	/ð/	this, that, brother, there, the	
wh	/w/	what, why, where, wheel, whip	
wr	/r/	writing, wrestler, wrong	
FINAL:			
<u>FINAL:</u> digraph:	sounds like:	for example:	my example(s):
	sounds like: /t∫/	for example: bea ch , coa ch , roa ch	,
digraph:			
<i>digraph:</i> ch	/t∫/	bea ch , coa ch , roa ch	
<i>digraph:</i> ch ck	/t∫/ /k/	bea ch , coa ch , roa ch bla ck , tra ck , pi ck , flo ck , lu ck	tou gh
<i>digraph:</i> ch ck gh	/t∫/ /k/ /f/	bea ch , coa ch , roa ch bla ck , tra ck , pi ck , flo ck , lu ck cou gh , trou gh , rou gh , enou gh ,	
<i>digraph:</i> ch ck gh mb	/t∫/ /k/ /f/ /m/	bea ch , coa ch , roa ch bla ck , tra ck , pi ck , flo ck , lu ck cou gh , trou gh , rou gh , enou gh , co mb , to mb , aplo mb , plu mb	tou gh

digraph:	sounds like:	for example:	my example(s):
bb	/b/	ro bb er, so bb ing, ho bb le	
cc	/k/	so cc er, o cc ur, stu cc o	
dd	/d/	pu dd ing, wedding, sadder	
ll	/l/	alluring, allied, balloon	
mm	/m/	summer, humming, immature	
nn	/n/ /p/	runner, annoy, announcement opportunity, shopping, kipper	
pp rr	/p/ /r/	hurry, worried, curry, sorry	
ss	/s/	a ss ess, less, massive	
tt	/t/	shutters, cottage, plotted	

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Learn the International Phonetic Alphabet (IPA)

Spelling and Sounds – Common Consonant Clusters

3. True Consonant Clusters (that sound the same as they are spelled) - INITIAL:

c/cluster:	sounds like:	for example:	my example(s):		
bl	/bl/	blood, blend, black, blown			
br	/br/	bright, bring, brush, brilliant			
cr	/kr/	cry, crime, crow, crop, crumb			
dr	/dr/	drink, drop, drive, drip, dreary			
fr	/fr/	frighten, from, frame, France			
gr	/gr/	great, grape, grip, grime, grow			
pr	/pr/	prove, provide, pray, princess			
qu	/kw/	quite, queen, quick, quiet			
ry	/ri/	dai ry , ee ry , dia ry , hai ry , bu ry			
scr	/skr/	scream, script, scram, screw			
sm	/sm/	sm all, sm art, sm elly, sm ooth			
st	/st/	stay, stop, stink, stolen, sty			
tr	/tr/	tropical, trench, train, triumph			
FINAL:					
c/cluster:	sounds like:	for example:	my example(s):		
ly	/li/	only, lonely, truly, rarely			
mp	/mp/	hu mp , bu mp , cla mp , da mp			
nch	/nt∫/	mu nch , lu nch , be nch , ste nch			
nd	/nd/	end, stand, mend, ground			
ndy	/ndi/	wi ndy , ca ndy , ha ndy , sa ndy			
<u>4. Consonant Clusters Ending with /s/ or /z/ (at the end of a plural noun) – FINAL:</u>					
c/cluster:	sounds like:	for example:	my example(s):		
nts	/nts/	pla nts , accou nts , re nts			
rds	/dz/	reco rds , bi rds , ca rds , cho rds			
ts	/ts/	sweets, oats, boats			
5. Consonant Clusters in Compound Words – (consonant clusters meet) – MEDIAL:					
c/cluster:	sounds like:	for example:	the two words are:		
tchb	/t∫b/	swi tchb oard	switch + board		
ffh	/fĥ/	cli ffh anger	cliff + hanger		
ndf	/ndf/	gra ndf ather	grand + father		
ndbr	/ndbr/	grou ndbr eaking	ground + breaking		
		-	-		