



# IIT Madras

## BSc Degree

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**Consonant Clusters in English Words**

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## Consonant Clusters in English Words

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Welcome to the class. Today, we are going to look at Clusters in English Words. When we talk about clusters, we are talking about consonants that come together to make a cluster. In a word, we have only two types of sounds they are consonants or vowel sounds. We know that we cannot have a word without a vowel sound. So, a vowel sound that is presence of a vowel sound in a word is mandatory. Therefore, we also say vowels are fundamental sounds for the formation of words.

Then, we have consonant sounds, alternations of consonants and vowels, make it sound, alternations of consonant sounds and vowel sounds, make a word. We are going to look at one specific aspect of that, which is known as cluster. I will take you through this whole understanding and do pay attention to the nuances of one specific thing that we observe happening in a word.

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## Simple words

- Most of the words are a sequence of consonants and vowel sounds.

• CVCV papa, daddy /daedii/, mommy /momii/  
 • CVC dad, mom,  
 • VC am, is, are, it, in, on, at  
 • CVV the /dii/, sea /sii/

[CVCVCV]

- Words only with vowels sounds

• Eye /aai/



Look at some simple words; what do we see in the words? Take a very simple word or simple some simple words in a language and observe what you see and what and try to apply what we know about sounds. In such in a word like this, papa, or daddy, mommy. So, I have given it to you here in a particular way. Look at this is a word papa, one of the simplest words for the following reasons.

It has a sequence of it has four sounds in it. And they alternate between consonant, vowel, consonant and vowel. So, here, we have pa is a consonant sound, a is a vowel sound. Again, pa is a consonant sound and a is vowel sound. That is how this word papa becomes an example of the sequence. We have a word like daddy.

Once again, I underline here and suggest you not to look at spelling of the word. Rather pay attention to the sounds. When we say a word like daddy, these two papa and daddy, these two words mean the same thing. But they are written differently in English. But when you pay attention to the sequence of sounds in this word, daddy, what do we see? D, a, d and e, four sounds again, like here, we have one, d, a, d, e.

So, here we see consonant, vowel, consonant and a vowel. So, d is a consonant, a is a vowel sound. These are not two different vowels. This is one vowel sound a. It is known as diphthongs. It is one of the diphthongs in English language, again, another consonant sound d and long e, e, daddy. This word mommy has again four sounds m as a consonant, a vowel, m consonant, again, e as vowel sound.

So, all these words here these words are examples of the sequence. Then we look at words like dad, mom, please pay attention these words mean the same these words have seen meanings, but look at it, when we say dad, it has three sounds in it, d, a and d, mom, m, o, m. So, here you have consonant, vowel, consonant in both these words, which is an example of this sequence. We have some simple words like m is, are, it, in, on, at, these are independent English words, they are examples of vowel and consonant fix.

So, in all these words you see, a as vowel sound and m as a consonants, is e, vowel sound, z consonants, are, a as vowel sounds, and r as consonant sound, it, in, on, at, they are all examples of same thing. Then we see some examples of consonant, vowel and vowel secrets. d, like, when we pronounce this word is d, so, you have a vowel consonant and a vowel, c, you have a consonant and a vowel. So, with this, I am trying to show you the composition of a word in English for this, here, we are talking about English therefore, we are only dictating examples from English.

However, if you extend this understanding, this applies in all languages, check, recheck language that you speak, it is for the purpose of learning a new language. In particular, for the purpose of looking at new answers of a new language, it is always helpful to check facts in our own languages as well, that is the languages that we speak the language that we grew up as well. So, when you check, it is true for your language as well that all words have sequence of consonants and vowels, they alternate between one another. There are only two types of sounds in all words in any language.

And in all languages, you definitely have a vowel sound in a word. In other words, we cannot have a word we cannot make a word without a vowel sound in any language. And here, we have discussed such things with examples from English. So, what you know about the English language, here, from this discussion, that we have sequence of consonants and vowels as sound in words in English; all words that we speak, come from one or the other sequence.

As I said, we cannot have a word without a vowel sound, but it is a fundamental sound in the language. We can have a word without a consonant sound. Very few words, though, but we can have a word without a consonant sound. So, we have words like eye, in this word, you only have a sequence of two vowels, a and e, eye and there are more words, I am only giving you one example here, to close the discussion on this section.

So, when we see here for words, we have consonant, vowel, consonant, vowel, consonant. If we take it as a fundamental template, what we see is, all words will have alternations between only this that is the formation of a word. Let us move ahead and look at clusters.

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## Words

- Words are sequence of consonants and vowel sounds.

cluster

- CVCVCV
- CVC
- VCVC
- CVV

papa, daddy, mom  
dad, mom,  
1 2 3 4

- CCVC
- CVCC

glass    [g l a s]  
sink    [s i n k]

- Sounds from same places of articulation do not come next to each other.

pb   bp   td

- Words only with vowels sounds

- Eye    /aai/



We can look at some more words you have seen these words. Now, we are going to introduce this notion of what we started with is cluster, what is a cluster? What is it that we call a cluster? We are going to show you some examples. So, when you look at it, these are the examples that we have just discussed papa, daddy, mom, we are basically mommy, then they are examples of the sequence. Dad and mom are examples of the sequence.

Now, I am giving you two more sequences here. And suggest you to find a few words in English, at least, let us say 1, 2, 3, 4 words, which come from this sequence, and four words that come from the sequence. Do this exercise and you will see how you will get examples of these things when you think little hard.

Now, look at the next examples, we all speak these words quite frequently. And now I am only asking you to pay attention to them, the word like glass, so, what are the sounds here? G, l, r and s, there are four sounds in this word as well. You have 1, 2, 3 and 4. When you look at the sequence of sounds in this word, you will see it, you find it this. So, you have two consonants in the beginning, then it comes a vowel and then comes another concept. In this word sink, you again have s, a, n and g. So, in this word, s, a, n and g. So, you have 1, 2, 3, 4 sounds, but they have come in this sequence.

Now, here, I asked you to say these two words couple of times and you will see that the word is glass. Please pay attention to this word is glass. It is not galass, meaning there is a cluster between g and l, these two sounds forming clusters. In the second word, n and k, these two sounds form a cluster that is these two vowel consonant sounds form a cluster. So, the first thing that we need to know about cluster is only consonant sounds on the cluster, not vowels. In fact, it is absence of the vowel that is called a cluster.

Now, please pay attention to one more specific thing about cluster. As you know about sounds, consonant sounds, when we say consonant sounds independently, like g, p, j, take an example of any consonant sound. Inherently you find a built in vowel sound a at the end of the consonant sound. In fact, it is not possible to say a consonant sound without the help of that inbuilt vowel sound in it. And that sound can only be a sound, short a sound. Take an example of any consonant sound, and you will see this example tested.

Now, when we make a word out of consonant sounds, then in some cases that built in vowel gets completely deleted and another consonant sound comes in, and such a situation is called cluster. And that becomes apparent in speaking also where we do not hear that inbuilt vowel sound such a situation is called cluster. Therefore, in this word, we say glass, g and l, two consonant sounds are making clusters. You can note here that g and l have two different places of articulations, g is a velar sound, l is a lateral liquid zone. n and k, n is a nasal sound and k is velar sound.

It is important to note because sounds from saying places of articulations do not come next to each other, that is, you will not see a cluster of p and b, b and p, t and d, why because p and b both have bilabial sounds. b and p again, both are bilabial sounds, t and d both are dental phones. So, two sounds from the same place of articulation, would not make clusters.

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## Consonants

- Sounds produced by modification of the flow of exhaling air in the vocal tract

• /k/ -- velar	[-asp, - voice]	king, class	[CC]
• /g/ -- velar	[-asp, + voice]	great, glass	[CC]
• /p/ -- bilabial	[-asp, - voice]	pink, pure	[CC]
• /b/ -- bilabial	[-asp, + voice]	bliss, bless	[CC]

- They have an inbuilt vowel sound 'a' with all of them.



We take some more examples to understand cluster in English words. Take this one, k and g. So, how do we k according to place of articulations is a velar sounds, g also, according to place of articulation, it is a velar sound, but according to their manners of articulations, g is not an aspirated sound. And it is not a voice sound either. But, g is voiced but not aspirated.

So, you know about aspiration, you know about voicing, these our understanding of each features, which are known as manners of articulations of the sound, help us understand, distinguish between two sounds like k and g, k and g if they are both velar sounds, then what is the difference between the two? The difference lies in them the way we speak those sounds that is the manner of articulation.

One is voiced, the other is not voiced. Both of them are known aspirated but one is voiced, the other is non voiced, this table helps you understand. Same thing for bilabial sound, when we take two examples of bilabial sounds, we see p and b, we have p and b both are not aspirated, but p is voiced and b is not voiced. So, we can see some examples like when we say king, we say k, a, n but we can say class, look at that, k and l are making clusters, in this one g and l are making clusters.

In this one pink, pure you have bliss and bless that is b and l are making clusters in both these words. So, there is no cluster here that is pink n and k are making clusters, b is not in cluster with any sound and this one does not have any cluster. So, we just take some of these for examples to understand clusters. hopefully, I hope you understand what we mean by a cluster two consonant sounds next to one another is called cluster that is each consonant has a small







How is it that we have millions of words out of only these 44 sounds, that is because there is no limit on how sounds occur in a word, how many sounds occur in a word, how many syllables we have in a word, usually, we do not find too long syllables, that is too many words, too many sounds in a word, but it is normal to have a word with four sounds 5, 6, 7 sounds and to have more number of sounds in a word, we need some clusters. So, formation of cluster in natural language is a natural phenomenon. And therefore, we are drawing your attention to these things.

No two sounds from the same place of articulation we have just described it and we have underlined it again for you can become part of a clusters, so, p and b will not make a cluster, m and b or m or m are good that is because one nasal sound and one non nasal sound can make a cluster from the same place of articulation, but not two non nasal sounds from the same place of articulation can make a cluster. So, this is some more information about cluster.

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## Consonant Clusters

- Two consonant sounds together
- Reduction of the inbuilt vowel sounds from the first one
- Not in random order

• Cluster	-	<u>/k</u> l <u>æ</u> st <u>ər</u> /	<u>CC</u> V <u>CC</u> V <u>C</u>
• Bliss	-	<u>/b</u> l <u>i</u> s/	<u>CC</u> V <u>C</u>
• School	-	<u>/s</u> k <u>u</u> l/	<u>CC</u> V <u>C</u>
• Scooter	-	<u>/s</u> k <u>u</u> t <u>ər</u> /	<u>CC</u> V <u>CC</u> V <u>C</u>
• Blast	-	<u>/b</u> l <u>æ</u> st/	<u>CC</u> V <u>CC</u>



So, if you see the examples of more words, like cluster itself, as I discussed, it has two of them in it. So, here and here, bless you have cluster of b and l in the beginning of the word, school, s and k in the beginning of a word, scooter, s and k in the beginning of the word, blast, b and l, again, in the beginning of a word, and s and t at the end of the word. So, these are some of the some of the random examples of words in words with clusters.

Now, here on when you look at a word, please see, if you can find a word with a cluster that is cluster of consonants. You do not have to be meticulous about it every time you speak. But to understand the notion of clusters, at this point I suggest you to take examples of 20 words and see how many of them have clusters?

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### Clusters of three consonants



• Spring	/spring/		CCCVC
• Stress	/stres/		CCCVC
• Screw	/skrue/		CCCVC
• Splash	/splash/		CCCVC
• String	/string/		CCCVC
• Scrub	/skrub/		CCCVC



That is the story about cluster so far. Now, we need to discuss one last point about cluster of consonant sounds in English in the following week. You see, we have just noticed that a cluster of two sounds may occur at any position in a word that is a cluster of two sounds occurs in the beginning, in the middle or at the end of your word. So, there is no restriction on where cluster of two sounds occur in a word.

However, if you pay attention, we have a lot of words like this. Words, without clusters can be millions. But words with cluster are not doing, the total number of possible worlds with clusters and total number of possible words without clusters. There is a massive difference between a number of these two types of words. However, it is also possible to have a cluster of three consonant sounds in English language. It is possible in other languages as well, but here we are only going to look at examples from English language.

It is possible to have, please take a note, it is possible to have a cluster of three consonant sounds as well, particularly in the beginning of a word. It is possible elsewhere as well, but we are going to look at a specific examples of cluster of three consonant sounds in the beginning of the word. And when we look at that, I invite you to find some similar examples, but please take a look at this whole notion first and then find examples for yourself.

So, when you look at word like springs, stress, screw, you see in the beginning of a word, these are the three consonant sounds that are making clusters. What are those sounds, they are s, p and r, in second word, you have s, t and r, in third word you have s, k and r. Look at set of another three words, splash, string, scrub, you have s, p, l in this one, splash, string, s, t and r, scrub s, k and r. Please note in all these words, you have a cluster of three consonant sounds in the beginning of word. However, when you take a look close look at it we find something surprising something very remarkable.

Look at this, what do you find here? In this set, what you see is the first consonant of this type of cluster is always s and second consonant is p, t, k and the third one we see is l. In the second set also we see first set s, second set p, t, k and here we do find one l. So, if we take a look at this, then we see we have s, p, t and k and r and l this is what we see coming out as a template for cluster of three consonant sounds.

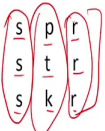


Now what how do we look at these. I will help you look at it. If you see p, t and k, they are all voiceless, stop sounds, they are all each one of them, velar stop, dental stop and bilabial stop, velar, dental and bilabial stop and r and l are liquid sounds and s is a fricative. Now I suggest you to find more words.

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- Scream
- Scroll
- Scrutiny
- Stress
- Scrap
- Strand
- Strict
- Strip
- Spring



## Clusters of three consonants

• Spring	/spring/		CCVC
• Stress	/stres/		CCVC
• Screw	/skrue/		CCVC



• Splash	/splash/		CCVC
• String	/string/		CCVC
• Scrub	/skrub/		CCVC



You can find words like this scream, scroll, scrutiny, stress, scraps, strand, strict, strip, spring, I want you to, I want to invite you to add more words to this. Interestingly, what you are going to find is this pattern in all these words, no words. And here is the conclusion, please take note of that. No word with a cluster of three consonant sounds in the beginning. That is in the beginning of your word gets any sound other than these as the member of the cluster. So, you will never find a word which have got a cluster of three consonants and in the beginning has any sound other than s.

Take a look at, do this exercise for yourself and you will see, you will relish the joy of underlying structures of language. Languages are rule governed and they have definite structure in it. As is as the students of data science, you need to keep your eyes open for finding patterns. This is one example of finding patterns in underlying structure of language. And this is what the basic course structure of languages the word formation is. And this is how we look at structure of words and this is how we look at how we understand clusters.

Now, I can also add one final thing to it that you do not have a cluster of four consonant sounds in the beginning of your word. No word is possible with a cluster of four consonant sounds in the beginning of your word in English. There are some words where cluster of four consonants at the end is possible, but they are going to be very few.

In fact, words possible with a cluster of three consonant sounds in the beginning of a word. Such words are also very few in numbers. As you can see, we have got a list of few of them, I invite you to make a list of few more that will give you an idea of structure idea of this idea of cluster of consonants in English words.

Now, the main point of this class is to understand clusters. What is it that makes a word simple word and what is it that makes it a word with a cluster of consonant sounds in it that is one part. The other thing is, when you pay attention to these things, it helps you improve more not just vocabulary, but also your pronunciation. With the help of these things, you can improve your pronunciation tremendously.

You can develop confidence about understanding of these nuances of language for yourself. At the same time, you also get to see how we look at patterns within language. That is all. We will meet with you next time with something new. Thank you.

