Classification of Vowels

You know that consonants are described by the manner of articulation, the place of articulation and voicing. For example, /p/ is an unvoiced, bilabial plosive (or stop). Now we will look at the description of vowels…

First, it is important to know the definition of the following words:

monophthong = a vowel sound pronounced as a single, unchanging sound

diphthong = a sound which consist of a glide from one vowel sound to another

And, because we didn't include this earlier…

vowel = a sound where the vocal tract remains open, where there is no obstruction of the vocal tract

consonant = a sound with some degree of obstruction of the vocal tract

Now, let's move on to how vowels are described or classified…

When we describe vowel sounds, we use a 3-term label based on the 3 characteristics of their production:

- the height to which the tongue is raised
- the part of the tongue that is raised
- the position of the lips.

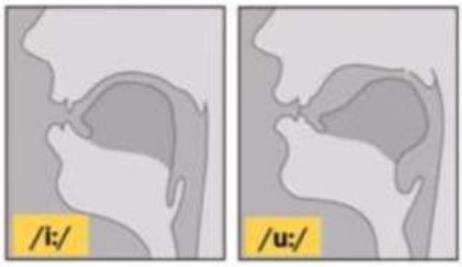
[There is another characteristic of vowels, but this is not always included in the description. Sometimes the state of tension of the tongue is considered a factor in the production of vowel qualities. Some vowels require a greater degree of tongue tension than others. Try saying the words leap *and* lip. *Place your finger against the outside of your throat between the chin and the larynx when you pronounce the vowel in* lip. *This part feels loose. When pronouncing the vowel in* leap, *it becomes tenser and is pushed forward. Tense vowels require a greater degree of tongue tension than lax vowels. Tense vowels are also longer than lax vowels of the same height.]*

Tongue Height

The first criterion for classifying vowels is the height to which the tongue is raised. Vowels can be classified as:

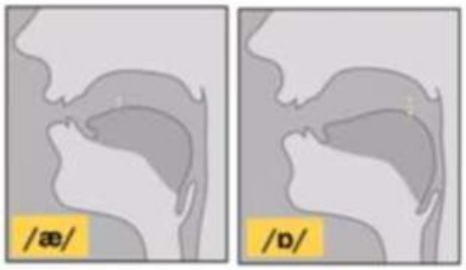
- close vowels,
- open vowels,
- half close vowels,
- half open vowels

Close vowels are those in which the tongue is held consistently as high as possible to the roof of the mouth without causing a frictional noise.



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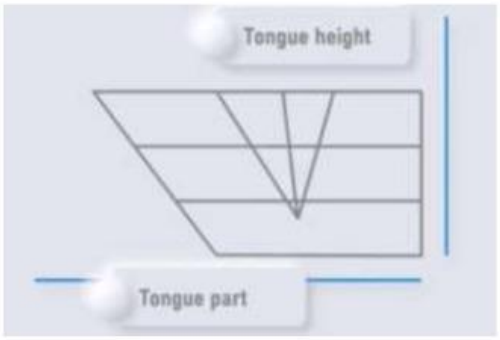
Open vowels are those in which the tongue is kept as low as possible away from the roof of the mouth.



Linguists have developed what is called the **vowel quadrilateral** to display this information. This diagram is an abstract representation of the area of the oral cavity that we use to produce vowel sounds and can help you to describe the vowels of any language.

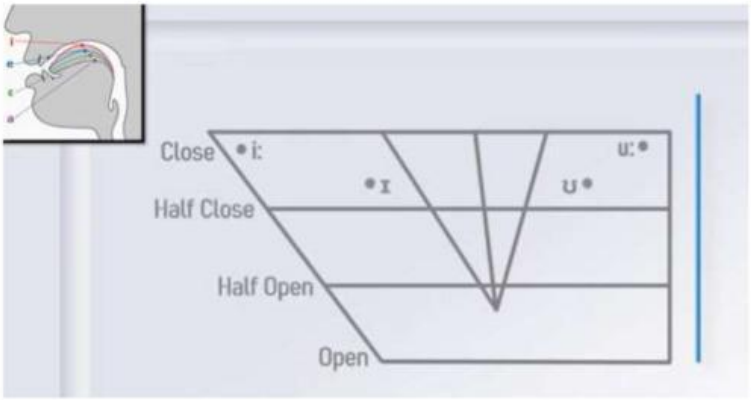


There are 2 axes (the blue lines) on the diagram. The vertical axis tells you the height to which the tongue is raised. (The horizontal line tells you the part of the tongue used in the production of a vowel sound, but we will focus on the height of the tongue for the moment.)

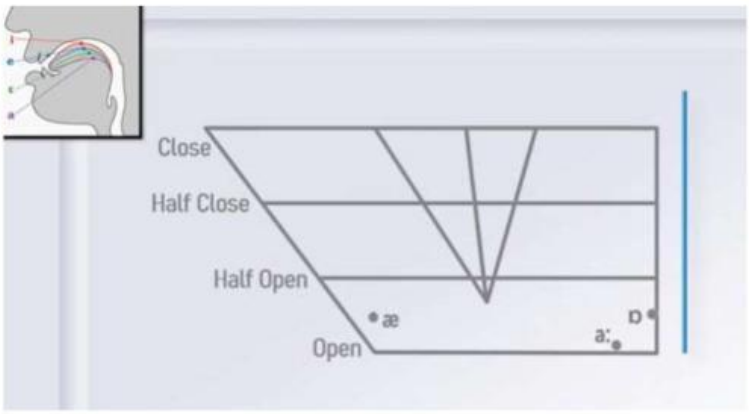


The higher the symbol on the diagram, the closer the tongue is to the palate. Therefore, these vowels are called close vowels. The close vowels in RP English are the fleece /i:/ and goose vowels /u:/.

Notice that the kit /ɪ/ and bull /ʊ/ vowels are between the close and half close lines. They are called half close vowels or close-mid vowels.



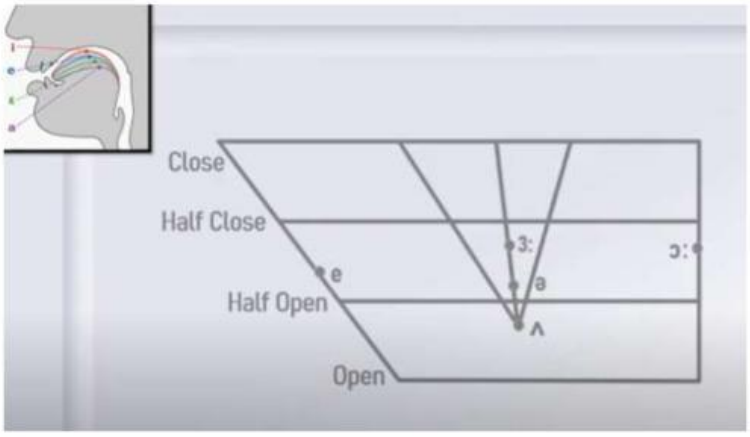
The lower the symbol, the more open is the gap between the tongue and the palate. Therefore, the vowels in the lower part of the diagram are called open vowels. In RP English, the open vowels are the trap /æ/, lot /ɒ/ and bath /a:/ vowels.



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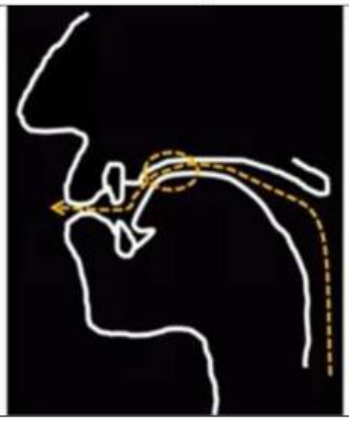
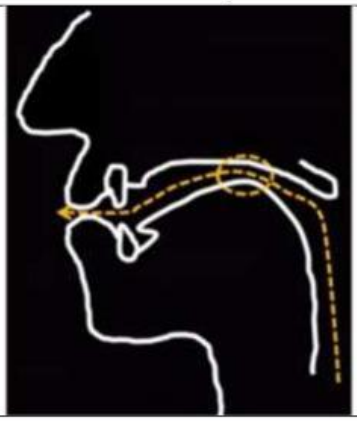
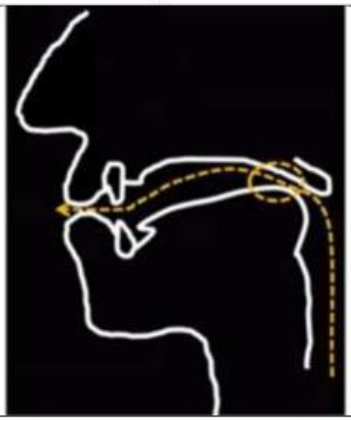
There are 2 horizontal lines that mark the half-close and half-open positions. Vowels that appear between these lines are often called mid vowels. In RP English, the mid vowels are the dress /e/, nurse /ɜ:/ and thought /ɔ:/ vowels as well as the schwa /ə/.

The strut vowel, because it falls between the half open and open lines, would be a half open vowel or open-mid vowel.

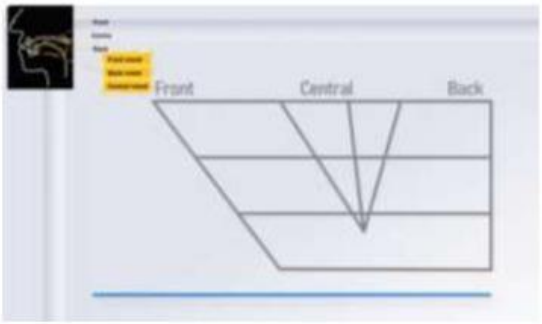


Part of the tongue raised

The second criterion for classifying vowels is the part of the tongue used in the production of the vowel sound. You remember the parts of the tongue: tip, blade, front, back and root. The position of the tip of the tongue has very little influence on vowel quality, so when classifying/describing vowel sounds, only the front, center and back of the tongue are taken into consideration.

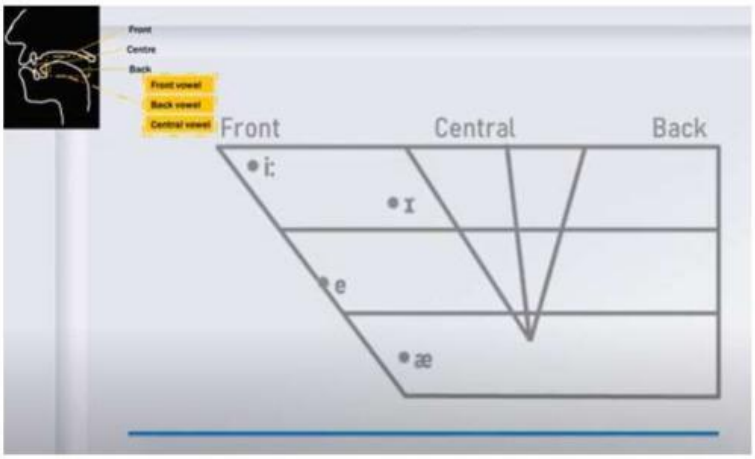
Front vowels are those in which the front of the tongue is raised.	Center vowels are those in which the center of the tongue is raised.	Back vowels are those in which the back of the tongue is raised.
		

On the vowel quadrilateral, the horizontal line represents the front, center and back parts of the tongue. A vowel on the extreme left tells you that it is the farthest the front of the tongue can move to produce that sound.

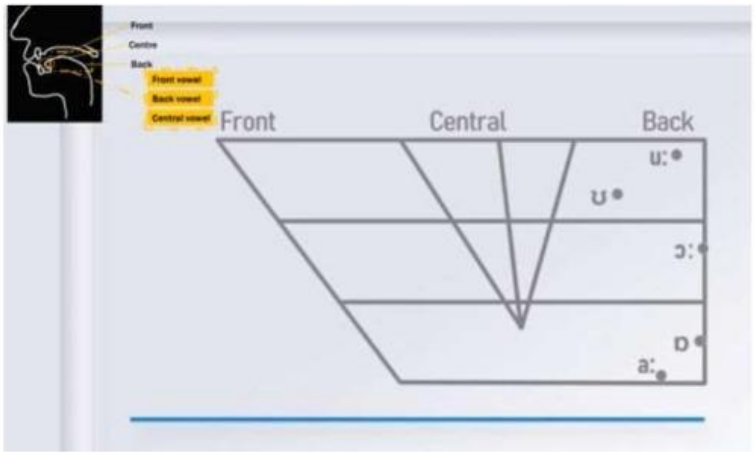


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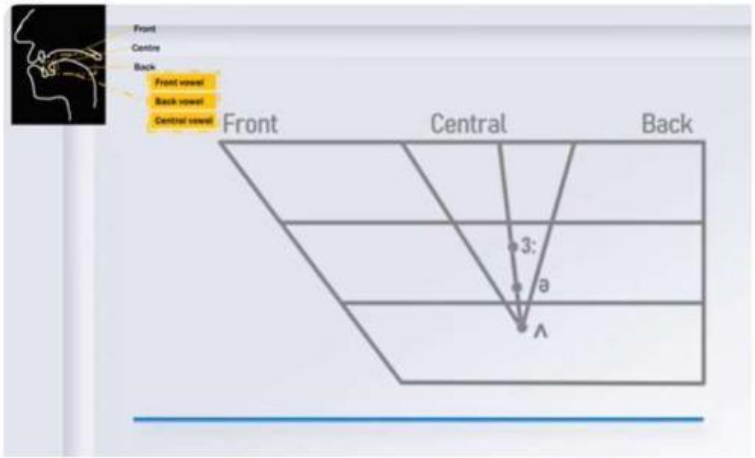
So, the vowels that you see on the left side of the diagram are the front vowels. In RP English, they are the fleece /iː/, kit /ɪ/, dress /e/ and trap /æ/ vowels.



The further right the vowel, the more the back the part of the tongue is involved. The vowels you see here are the back vowels in RP English: the goose /uː/, bull /ʊ/, thought /ɔː/, lot /ɒ/ and bath /aː/ vowels.



And obviously, the vowels in the center part of the chart are the center vowels: the nurse /ɜː/ and strut /ʌ/ vowels as well as the schwa /ə/.



Lip Rounding

The final characteristic to consider when classifying vowels is the position of the lips. There are 2 general options: rounded and unrounded.

Rounded vowels can be subdivided into 2 groups: close lip rounding (as in the goose vowel) and open lip rounding (as in the thought vowel).

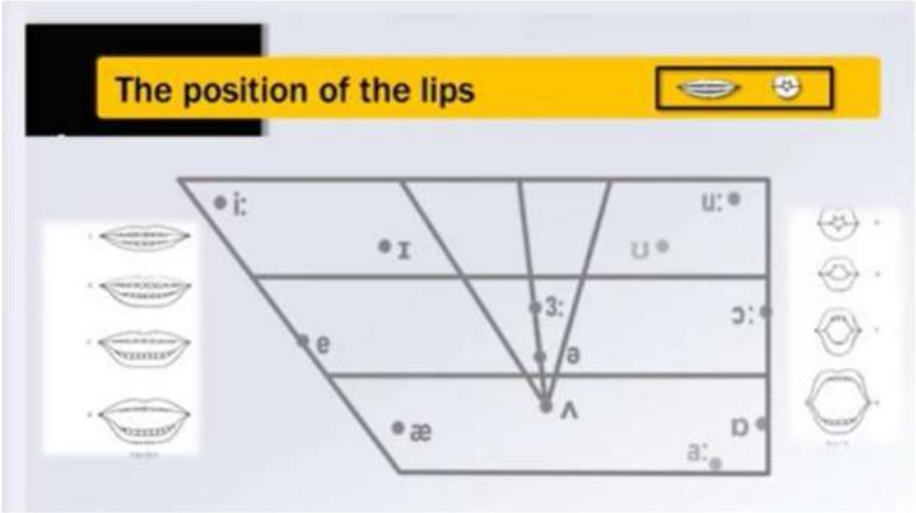
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Unrounded vowels can also be subdivided into 2 groups: spread and neutral. If the spread of the lips is marked—as in the fleece vowel—the vowel is described as spread. If the spread is not so marked (as in the dress vowel), it is called neutral.



This characteristic is not represented on the vowel quadrilateral, but spreading is usually associated with front and center vowels, and rounding is usually associated with back vowels. **OJO**: Note that there are exceptions:

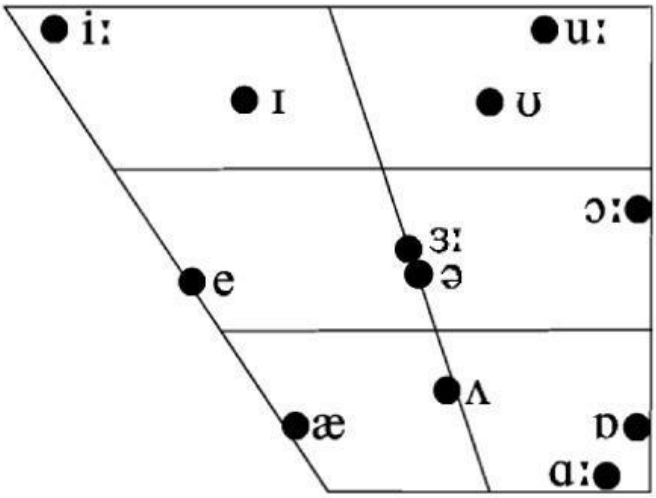
The exceptions are the bath vowel, which despite being a back vowel, is unrounded and the schwa, which is often described as neutral (neither rounded nor unrounded). The nurse vowel is frequently described as unrounded, but can also be listed as neutral.



Here are the 12 sounds in English Received Pronunciation.

Remember that when we label the vowel sounds, we use the 3-term label based on the 3 characteristics we discussed in the following order: the height of the tongue, the part of the tongue, and the position of the lips. So, for example, the RP sound /i:/ would be labelled: close, front, unrounded (tense) vowel.

Now, use the vowel diagram to label the vowels in RP pronunciation. Use the chart on the following page.



Note that many quadrilaterals (including the one in Roach) have the nurse vowel and the schwa in the same position.

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vowel	height of the tongue	part of the tongue	position of the lips
fleece			
kit			
dress			
trap			
nurse			
schwa			
strut			
goose			
bull			
thought			
lot			
bath			

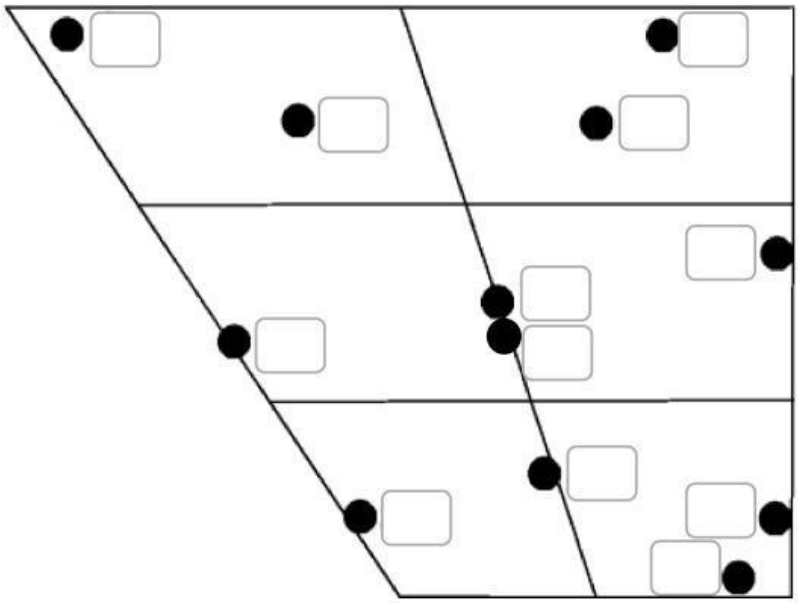
Another useful activity is to learn the vowel diagram—to memorize the position of each vowel sound—and thus be able to describe each. Move the vowel symbol to its corresponding position.

æ ʌ ɔː

ɜː iː ə

e ɑː ɪ

ɒ ʊ uː



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In the next document, we will look at the description of diphthongs.

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