

## Articulation of Vowel Sounds

### Definition:

Vowels are speech sounds produced without the blockage of the air stream in the mouth with vibrating vocal folds. The most important element in the production and articulation of vowels is the tongue.

### Description of Vowels

The various vowel sounds are affected by the changing shape and position of your articulators. Vowels will be described based on three main articulatory axes or variables:

#### 1) Position of the tongue:

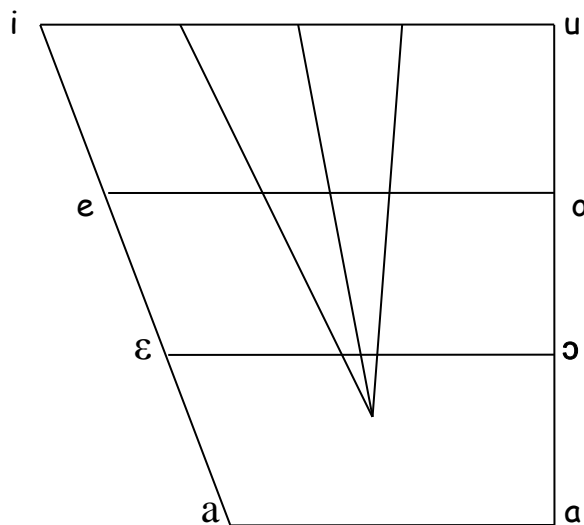
- ✓ Which part of the tongue is involved: front/ central / back.
- **Front vowels:** Are sounds produced with the tip of the tongue directed towards the hard palate.
- **Central vowels:** Are sounds produced with the center of the tongue raising towards the hard palate.
- **Back vowels:** Are sounds articulated when the tongue back is raising up towards the soft palate.
- ✓ What's the degree of the raising of the tongue. **Open/ half open / close/ half close**

#### 2) Position of the lips: rounded, spread, neutral.

- **Rounded** (as in the vowel /u:/): The corners of the lips are brought together towards each other, with the lips pushed forward. You can notice this by looking at a mirror while trying to articulate the following examples: look, new.
- **Spread** (such as the vowel /i:/): The corners of the lips are moved away from each other, as for a smile. E.g. dream, achieve.
- **Neutral:** (such as the vowel /a:/): The lips are not noticeably rounded or spread. E.g. farm, half, heart.

## Cardinal vowel scale: Daniel Jones' Diagram

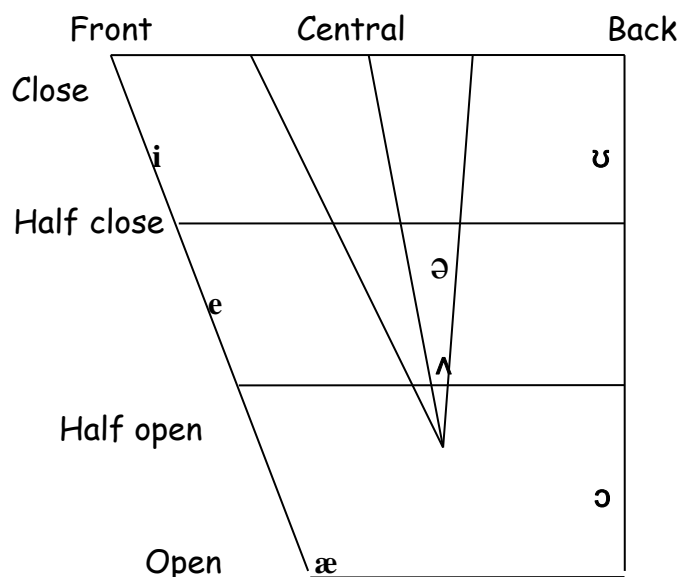
Daniel Jones, the late 19<sup>th</sup> c and early 20<sup>th</sup> century phonetician, introduced a diagram called the vowel **Quadrilateral** which is a four sided chart used as a reference for the description of vowels. Phoneticians are using this chart to represent the most important degrees of raising of the tongue and the parts which are mainly raised or involved in the articulation of vowels. They put on it the vowels corresponding to each position.



*Figure 01: The primary cardinal vowels*

## Categories of English vowels

1. **English short vowels:** Are vowels where the articulation takes less time. The short vowels in English are: /i/ /e/ /æ/ /ɔ/ /ʊ/ /ʌ/ /ə/.



*Figure 02: Short Vowels*

➤ /i/ (live, sit, bit, fish...) front, slightly spread, half close, lax.

**Description:** It is short vowel produced with the tongue near to the center, between close and half close. It is pronounced with slightly spread lips.

*"/i/ is a short, quick sound, your lips should barely move as you say it"*

➤ /e/ (bet, men, yes) front, loosely spread lips, between half close and half open.

**Description:** Is a front vowel produced with loosely spread lips with the front of the tongue being somewhere half close and half open position.

*"Practice and reduce errors on /e/"*

➤ /æ/ (cat, hat...) front, lips are neutrally open, open.

**Description:** To produce this vowel is to press the tip of the tongue firmly against the lower teeth then curl up the tip behind the lower teeth, then open the mouth wide open, the sound will be produced. The front of the tongue is raised between the half-open and open positions almost in the open one.

*"Practice, practice, practice and you will have /æ/down pat!"*

➤ /ɔ/ (pot, cross,...) **back, open, rounded,**

**Description:** This short vowel is produced with a good opening of the jaws and a slight lips rounding, it is not quite fully open; we observe between half-open and open. No contact being made between the tip, lower teeth or the upper molars.

*"Remember to produce your lips and drop your jaw as you say /ɔ/"*

➤ /ʊ/ (push, food, good, look...) **back, half close, close rounded.**

**Description:** This short vowel pronounced with the back of the tongue little nearer the centre than the back with close rounding position of the lips. It is articulated slightly above the half close position and there is no contact between the back of the tongue, lower teeth or the upper molars during its production.

*"Practice /u/ as you should, and you will be understood"*

➤ /ʌ/ (but, some rush...) **central, half open, and neutral.**

**Description:** It is produced when the centre of the tongue raised to the roof of the mouth, we note no contact during the articulation between the tongue and the upper molars. Lips were neutral and the mouth must be controlled, because if you open too much the mouth you will produce a sound very similar to /a/.

*"Just relax as say /ʌ/ and you will not run into trouble"*

➤ /ə/ "schwa" (about, perhaps, sister...) **central, half close and half open, neutral.**

**Description:** It is the most frequently occurring vowel in English and always indicates "stresslessness" or weakness of stress and articulated with the lack of energy or force. In quality it is mid (half close and open), central (between front and back).

*"Be sure to practice and you will be certain to learn/ə/"*

**2. English Long vowels:** Where the articulation of the vowel takes more time. In English, the long vowels are /ɑ: / /i: / /ɔ: / /u: / /ɜ: / (The colon ":" refers to the length of the sound).

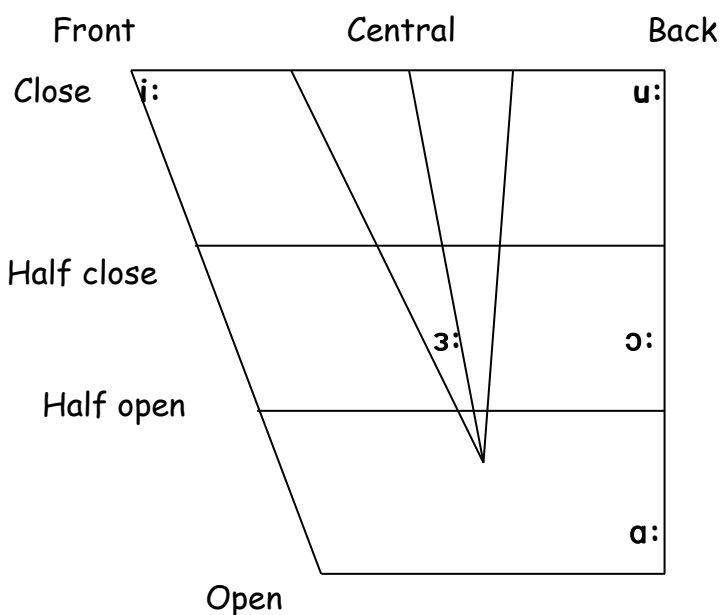


Figure 03: Long Vowels.

➤ /i: / (Sea, cheese, piece...) **front, close, widely spread lips.**

**Description:** Is a front vowel produced with the front part of the tongue slightly raised towards the hard palate. If you observe carefully the movement of the tongue while making this sound, you also notice that the velum is raised to partially close the nasal cavity.

*"Smile when you say /i: /, we guarantee it's easy to say /i: /"*

➤ /ɑ: / (arm, car, calm...) **back, open, neutrally open lips.**

**Description:** It's point of articulation is situated nearer the centre back with no firm contact between the rims of the tongue and the upper molars. The articulation of this vowel requires a considerable opening of the jaws. It is important to note that if the mouth is in a wide open position, the lips cannot take a widely spread position. Thus, the lips are somewhat neutrally open.

*"We are positive you will be soon be on top of /ɑ: /"*

➤ /ɔ: / (draw, hall, war...) **back, half open, quite strong lip rounding.**

**Description:** This is a long back vowel produced with medium lip rounding; the rounding of the lips is more prominent than for /ɔ/. Here again no contact between the tongue, the lower teeth or the upper molars.

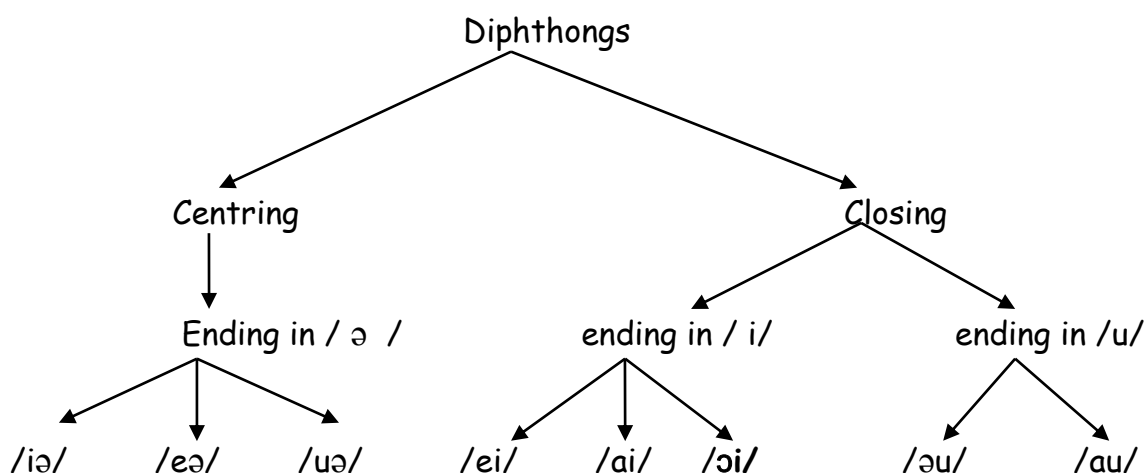
➤ /u: / (blue, group, include...) **back, close, closely rounded lips.**

**Description:** This is a back vowel produced with closely rounded lips and with no contact between the back of the tongue, the lower teeth or the upper molars.

➤ /ɜ: / (earth, journey, turn...) **central, between half close and half open, neutral.**

**Description:** It is a central vowel articulated with the centre of the tongue raising between the half close and the half open position with no firm contact with the tongue and the upper molars.

3. **Diphthongs:** The diphthong is a combination of two vowels produced as a result as a glide from one vowel to another. The important thing to remember about all diphthongs is that, the first part is much longer and stronger than the second part. For example, the diphthong /ai/ as in the word "eye" consists of the vowel /a/, and only in about the last quarter of the diphthong does the glide to /i/ begin. As the glide to /i/ happens, the loudness of the sound decreases.



The eight English diphthongs are divided into **centring** and **closing**:

↳ **The centring diphthongs** that glide towards the /ə/ (schwa) vowel.

- ♦ /iə/ the glide begins in the position for /i/; moving towards /ə/. The lips are neutral, but with a small movement from spread to open of E.g. **clear, fierce, fear.**
- ♦ /eə/ the glide begins in the position for /e/; moving back towards /ə/. The lips remain neutral. E.g. **air, scarce, there**
- ♦ /uə/ the glide begins in the position for /u/; moving forwards and down towards /ə/. The lips are loosely rounded becoming neutrally spread. E.g. **pure, sure.**

↳ **Closing diphthongs** have the characteristics that they all end with the glide towards /u/ or /i/.

### **Closing diphthongs ending in /u/**

- ♦ /əʊ/ the glide begins in the position for /ə/; moving up and back towards /u/. The lips are neutral, but change to loosely rounded. E.g. **go, home, phone.**
- ♦ /aʊ/ the glide begins in a position quite similar to /a:/; moving up towards /u/. The lips start neutral, with a movement to loosely rounded. E.g. **loud, house, now.**

### **Closing diphthongs ending in /i/**

- ♦ /ei/ the glide begins in the position for /e/; moving up and slightly back towards /i/. The lips are spread. E.g. **day, face, take.**
- ♦ /ai/ the glide begins in open position, between front and centre, moving up slightly forward towards /i/. The lips move from neutral to loosely spread. E.g. **nice, time, high.**
- ♦ /ɔi/ the glide begins in the position for /ɔ:/; moving up and forward towards /i/. The lips start open and rounded change to neutral. E.g. **voice, boy, coin.**

4- **Triphthongs:** The most complex English sounds of the vowel type are the triphthongs. They can be rather difficult to pronounce, and very difficult to recognize. A triphthong is a glide from one vowel to another and then to the third, all pronounced and produced rapidly and without interruption.

The triphthongs can be looked on as being composed of the five closing diphthongs with /ə/ added on the end.

/ei/ + /ə/ = /eiə/ E.g. **player, layer.**

/ai/ + /ə/ = /aiə/ E.g. **fire, liar.**

/ɔi/ + /ə/ = /ɔiə/ E.g. **royal, loyal.**

/əʊ/ + /ə/ = /əʊə/ E.g. **lower, mower.**

/aʊ/ + /ə/ = /aʊə/ E.g. **power, hour.**

**To classify vowels in English, we need to answer the following questions:**

- ✓ What is the position of the velum? In English, vowels are oral.
- ✓ What is the position of the lips?
- ✓ What is the part of the tongue which is mainly raised?
- ✓ What is the degree of the raising of the tongue?
- ✓ What is the position of the glottis? In English, vowels are voiced.