Phonetics

The Study of the way Humans make, Transmit, and Receive Sounds

Phonology and Phonetics

- Phonology is the study of the sound system of a language.
- Phonetics is the study of the physical properties of sounds and their place and manner of articulation in the vocal tract. The science of phonetics deals with the production, transmission and reception of speech. Thus it includes the description of the role played by the lungs, throat, mouth and nose etc while speech sounds are made.

Phonetic Transcription

- Phonetic transcription is the method of representing speech sounds in a writing system called phonetic alphabets. It is a standard system with which one can represent pronunciation by means of standard alphabet for one sound. The underlying principle in the phonetic transcription is to assign one and only one letter to each phoneme.

VOWELS

- Vowels may be defined as voiced sounds in the production of which there is no obstruction, partial or complete of the air passage. Pure vowels are 12 in number.

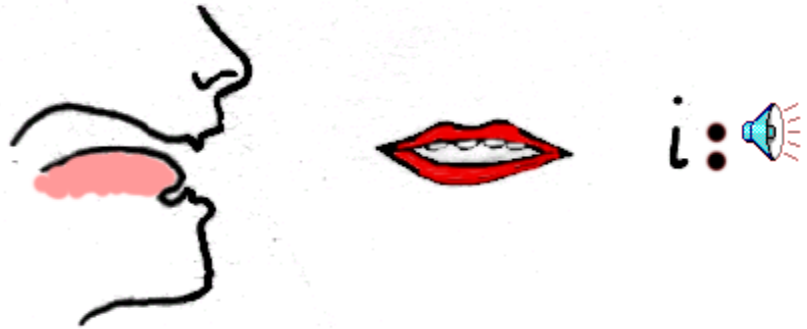
Dipthongs

- “Double Sounds” . It is used to describe a vowel which changes its quality in the course of its production. That is why English diphthongs are written phonetically with two letters.

Consonants

- Consonants may be defined as sounds in which the movement of air from lungs is obstructed as a result of a narrowing or a complete closure of the air passage.

Pure vowels usually come in pairs consisting of long and short sounds



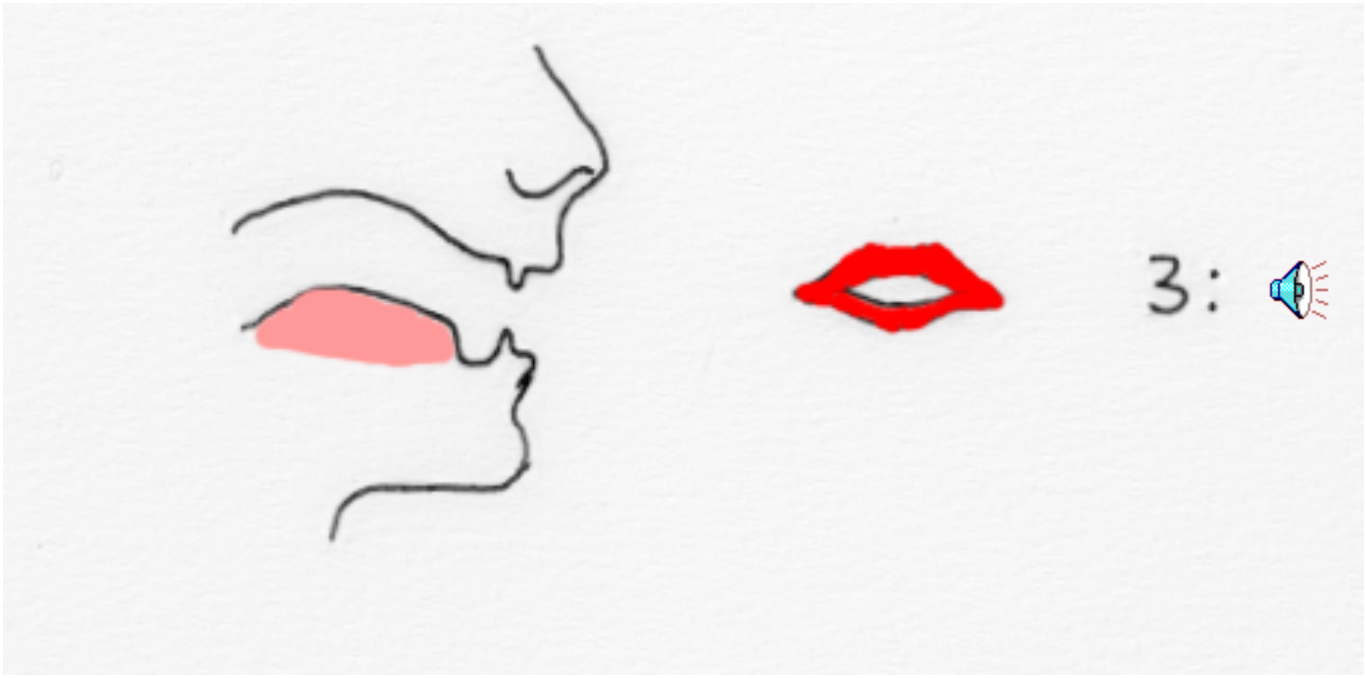
This is found in the word t***ea.*** The lips are **spread** and the sound is **long**

This is found in the word h***i***p. The lips are **slightly spread** and the sound is **short**

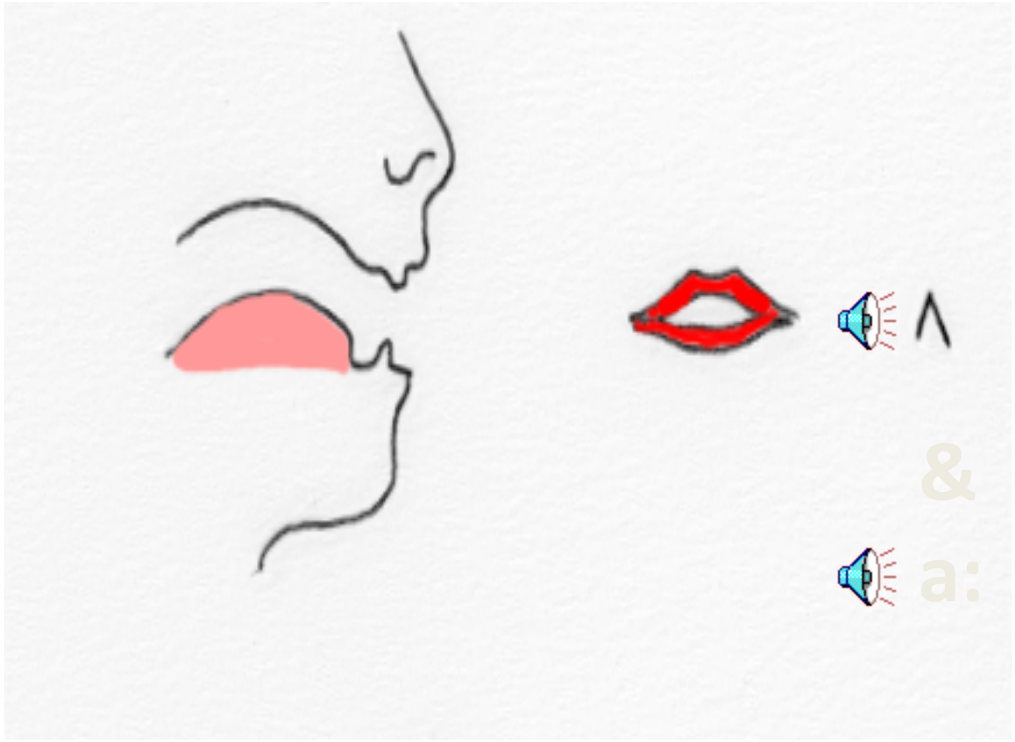
The tongue tip is raised slightly at the front towards the alveolar. In the longer sound the tongue is raised higher.

The most common sound in English – the Schwa

This sound is made by relaxing the mouth and keeping your lips in a **neutral** position and making a **short** sound. It is found in words like pap***er,*** ov***er, a***bout, and common in weak verbs in spoken English.



This sound is the **long** form of the schwa sound. It is found in words like th***ir***teen and b***ir***d. The mouth is relaxed and lips are **neutral.**



This is the short sound – ***u***p, c***u***t & b***u***tter

This is the **long** sound – c***ar,*** f***a***st & d***ar***k

The centre of the tongue is raised towards the soft plate, the lips are **neutral.**

u:

The **long** sound
– y***ou,*** t***oo*** & bl***ue***

ʊ

The short sound –

G***ood,*** w***ou***ld & w***oo***l

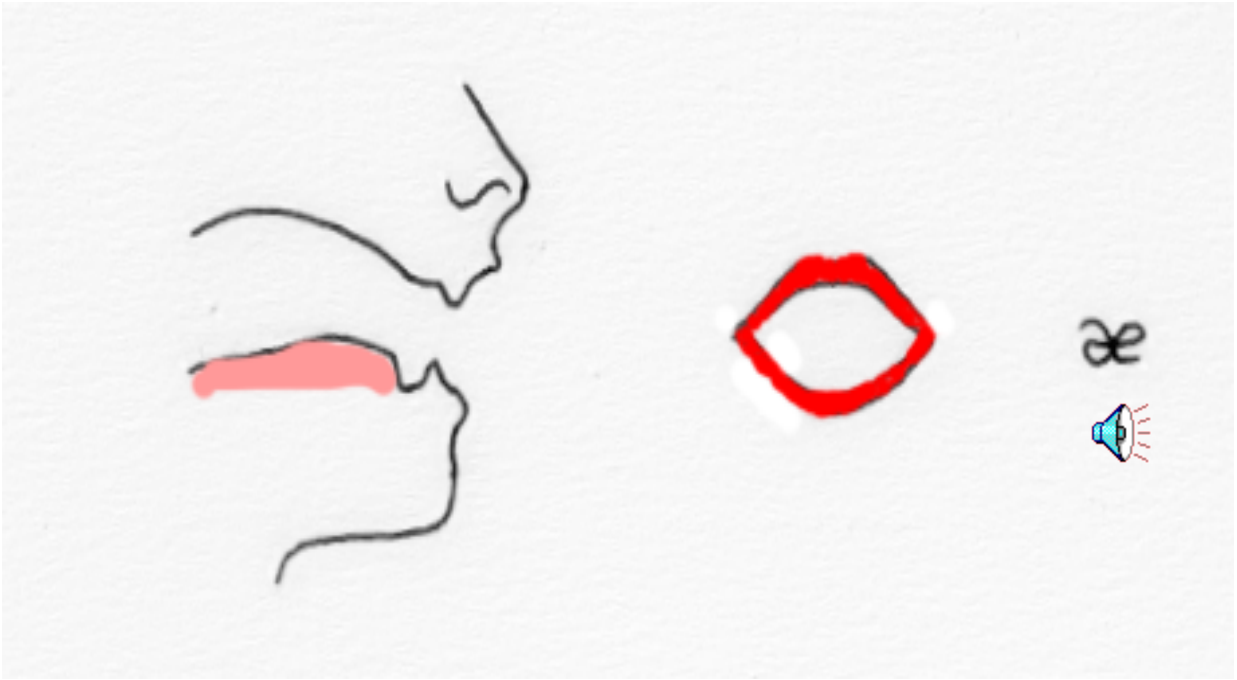
The lips are **rounded** and the centre and back of the tongue is raised towards the soft plate. For the **longer** sound the tongue is raised higher and the lips are **more rounded.**

Made with **rounded** lips and tongue slightly raised at the back

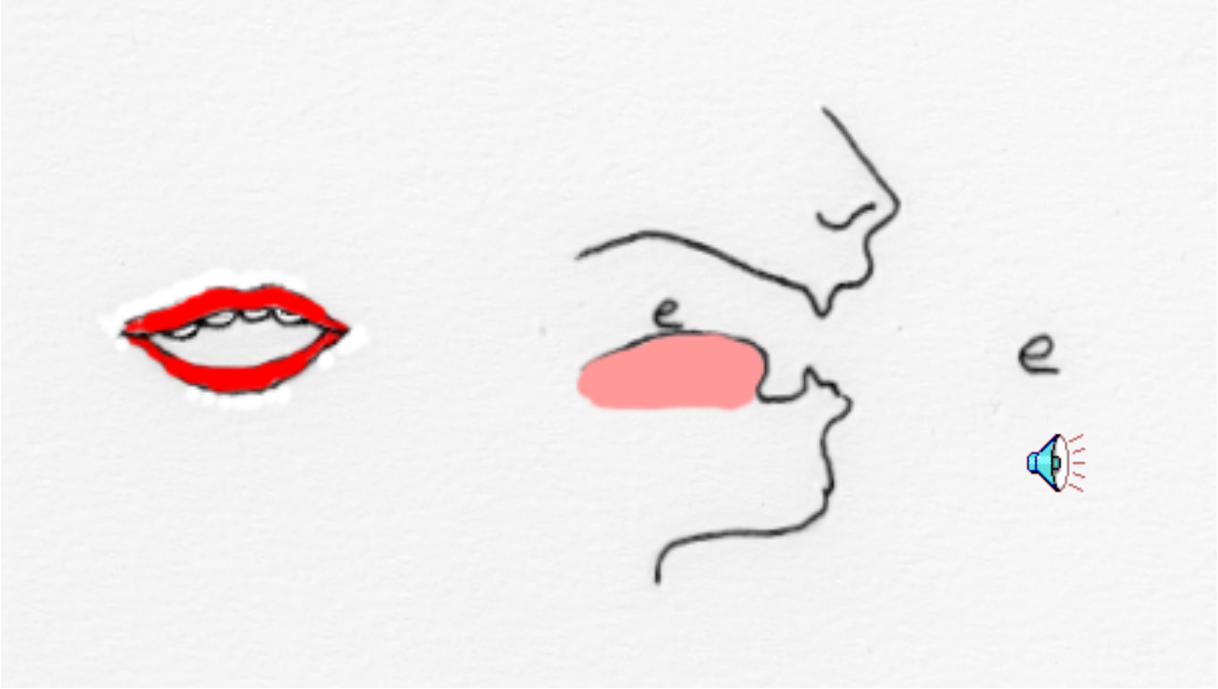
The **long** sound– d***oor,*** f***our*** & m***ore***

The **short** sound – h**o**t, cl**o**ck and wh**a**t.

Two of the vowels do not have long sounds



This sound is made with the mouth **spread** wide open. It is found in – c***a***t, m***a***n, ***a***pple & r***a***n



The sound of ‘e’ is found in – w**e**t, l**e**ft, wh**e**n & t**e**ll. Like the sound for ‘a’ it is a short sound that has no long version.

The vowel sounds we have just reviewed make up the rest of the diphthongs etc. that come next.

CLASSIFICATION Of CONSONANTS

English consonants are classified according to :

- The place of articulation
- The nature of obstruction (complete or partial)
- The position of the vocal cords (vibrating or not vibrating)

According to the place of articulation :

1. Bi-Labial : The sounds formed at the two lips. /p/ /b/

2. Labio - dental : The sounds formed at the lower lip and the upper teeth /f/,and /v/

3. Dental :The sounds formed by the tip of the tongue and upper teeth /θ/ /ð/

4. Alveolar : The sounds formed by the tip or blade of the tongue and the teeth ridge /t/ and /d/

According to the place of articulation Contd .....

5. Palato Alveolar : The sounds formed by the blade of the tongue and the back of alveolar /tʃ/ and **/ʃ /**

6. Palatal : The sound formed by the front of the tongue and the hard palate. **/j/**

7. **Velar : The sound formed by back of the tongue and the soft palate.** /k/ as in lack .

8. Glottal : The sound formed in glottis **/h/.**

According to Nature of Obstruction

1. Plosives or Stops : The sounds formed by the complete closure of the air passage, which is afterwards released suddenly. /p/ /b/.

2. Affricatives : The sounds formed by the complete closure of the air passage, which is afterwards released slowly. /**tʃ/ and** dʒ

3. Fricatives : The sounds formed by narrowing the air passage to such an extent that the air in escaping produces audible friction. /**f/ and /v/**

According to Nature of Obstruction Contd …….

4. Nasals : The sounds formed by a complete closure in the mouth while nasal passage is open. /m/, /**n/, /ŋ/.**

5. Lateral : The sound formed by means of a partial obstruction of the passage by the tongue at the centre of the mouth and allowing the air to pass freely one or both sides of the tongue . /l/.

6. Semi vowels : These are voiced gliding sounds in which the speech organs shift from one position to another.

According to Position of the Vocal Cords

- There are two kinds :-

1. Voiced : The voiced consonants are those in the production of which the vocal cords vibrate.
2. Voiceless : The voiceless consonants are those in the production of which the vocal cords do not vibrate.

- Voiceless : /**p/ , /t/ , /k/ , /f/ , /s/ , /ʃ/ , /θ/ , /tʃ/ , /h/**
- **Voiced : /b/ , /d/ , /g/ , /v/ , /z/ , /ʒ/ , /ð/ , /**dʒ/ , . /m/, /**n/, /ŋ/,** /l/, /**r/**

Description of English Consonants

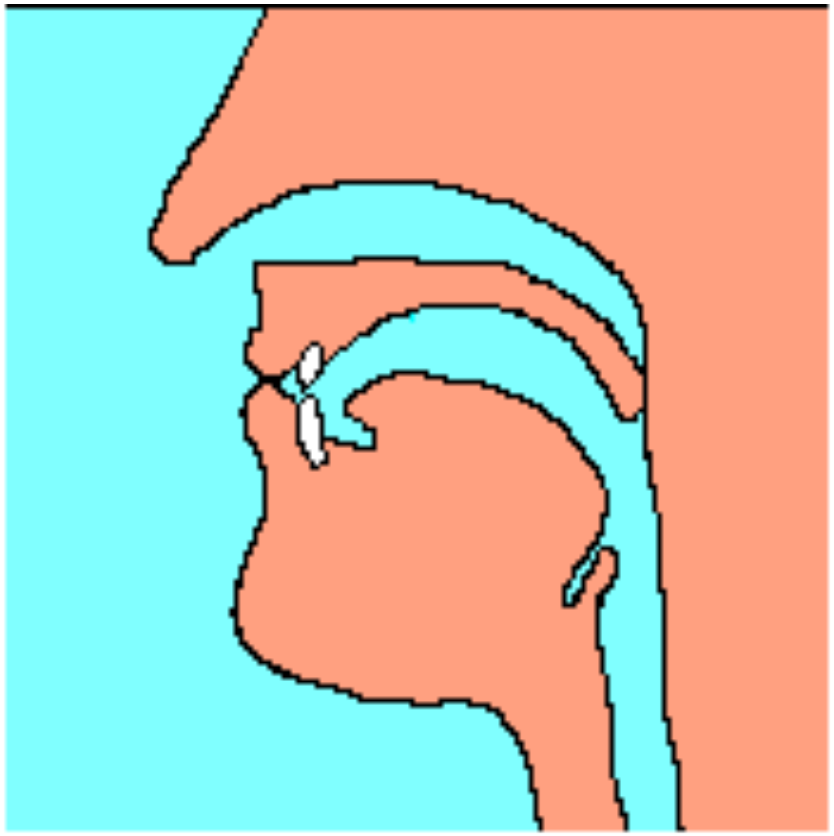
1. Plosives or Stops

i. Bi – Labial Plosives /p/ , /b/

The air passage is completely blocked By closing the lips and raising the soft Palate.

When the lips are opened the air rushes out with an explosives sound.

The vocal cords do not vbrate for /**p**/ But vibrate for /b/

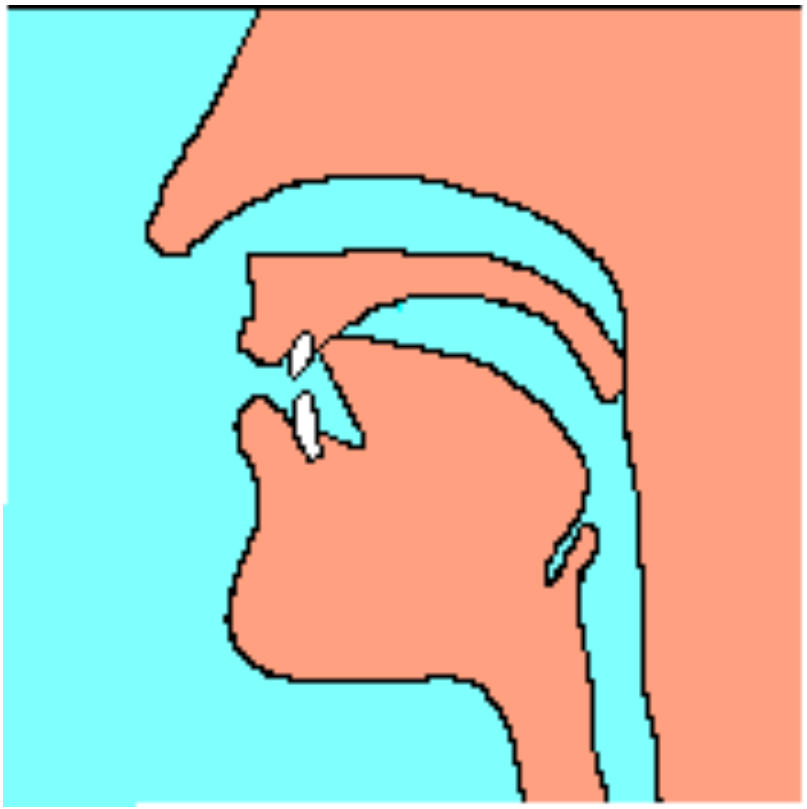


ii. Alveolar Plosives /t/ & /d/

❖The air passage is completely blocked by pressing the tip of the tongue against the teeth ridge, and by raising the soft palate.

❖When the tongue is removed from the teeth ridge the air rushes out with an explosive sound.

❖The Vocal cords do not vibrate for /t/, but not for /d/

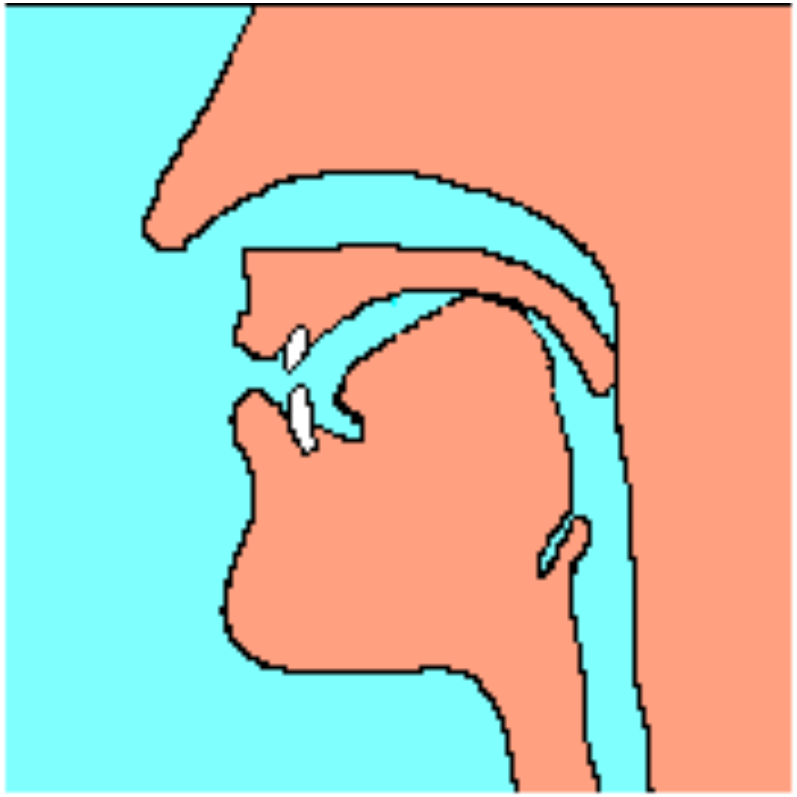


iii. Velar Plosives /k/, /g/

The air passage is completely blocked by pressing the back of the tongue against Teeth ridge and by raising the soft palate.

When the tongue is removed from the soft palate the air rushes out with an explosive Sound.

The Vocal cords do not vibrate for /k/ but vibrate for /g/



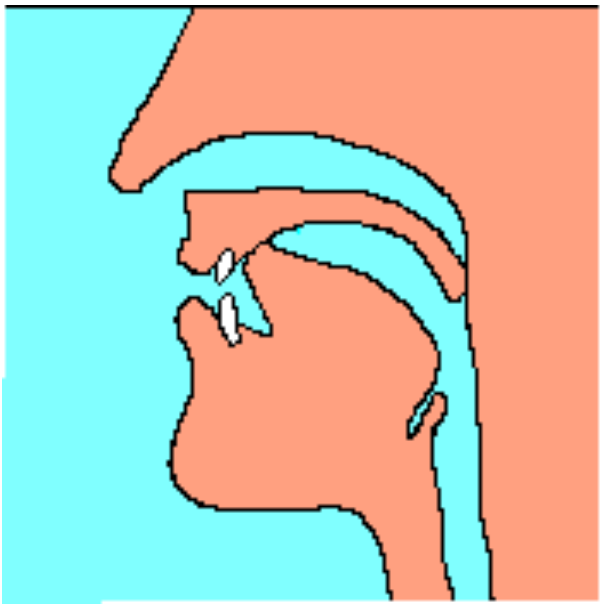
2. Affricates : Palato - Alveolar /tʃ/ , /dʒ/

The air passage is narrowed by raising the front of the tongue against hard palate and by raising the soft palate.

The sound is produced by small opening instead of the complete opening of the stop.

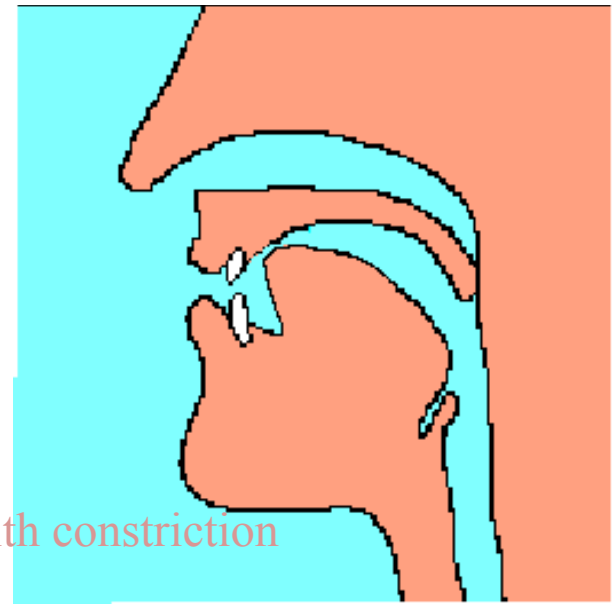
This small opening causes friction just like a fricative.

The vocal cords do not vibrate for /tʃ/ and vibrate for /dʒ/



Here are the two main phases.

1. Hold



2. Release with constriction

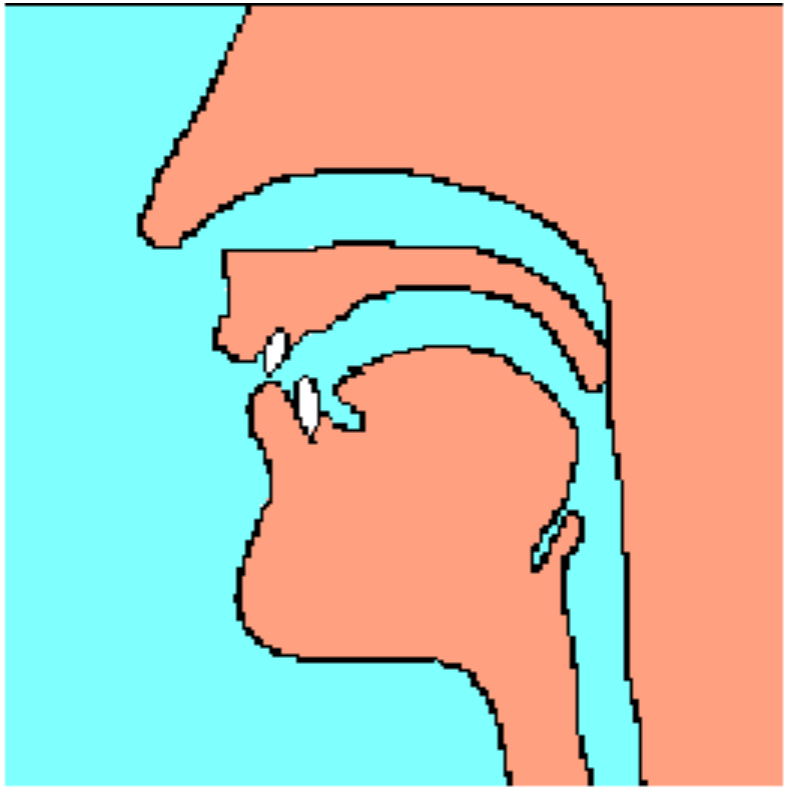
3. Fricatives

i. Labio – Dental /f/ , /v/

The air passage is partially closed by pressing the lower lip against the upper teeth.

The soft palate is in its raised position
The air escapes through the narrow opening between teeth and lips, producing a hissing noise.

The vocal cords do not vibrate for **/f/ but vibrate for /v/**



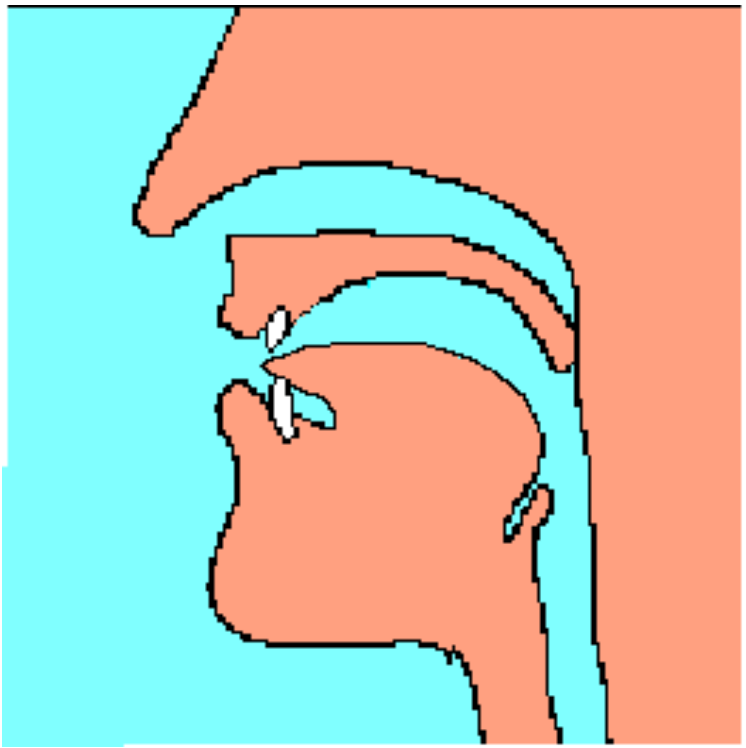
ii. Dental Fricatives : /θ/ , /ð/

The air passage is partially closed by placing the tip of the tongue behind upper teeth.

The soft palate is in its raised position and the nasal passage is closed.

The air escapes through the narrow opening between the teeth , producing a hissing noise.

The vocal cords do not vibrate for **/θ/ and vibrate for /ð/**



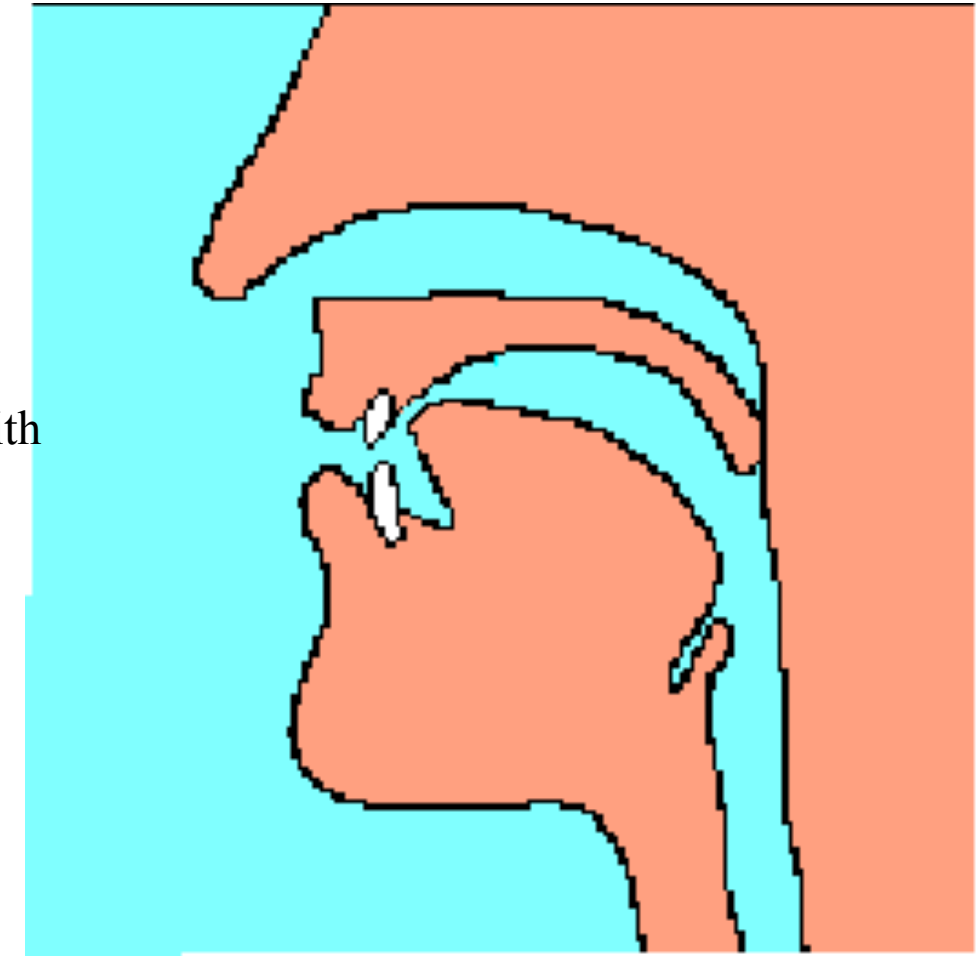
iii. Alveolar Fricatives /s/ and /z/,

The blade of the tongue is raised high towards the teeth ridge, thus leaving a very narrow space for the air to pass through.

The soft palate is in its raised position and the nasal passage is closed .

The air passes through the tongue and teeth with audible friction. as air hits the upper teeth causing a hiss.

The Vocal cords do not vibrate for /s/ and /z/,



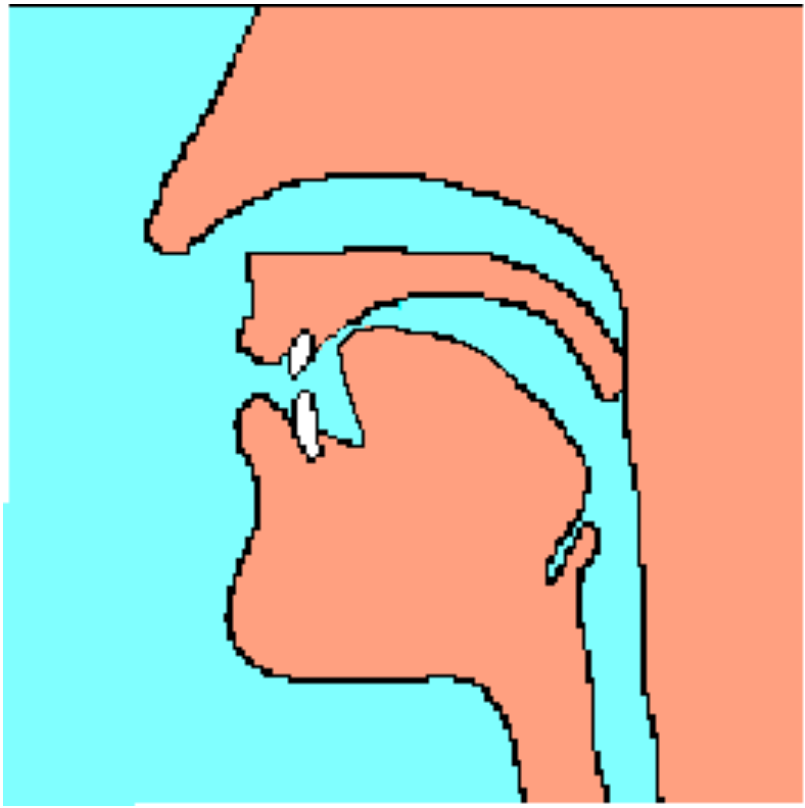
4. Palato Alveolar : /ʃ/ , /ʒ/

The passage is partially closed by Towards the hard raising the blade of the tongue towards the hard palate A further back than for /s/ and /z/.

The soft palate is in raised position and nasal passage is closed.

The air escapes through a passage down the middle of the tongue, which is narrower than in case of /s/ and /z/.

The Vocal cords do not vibrate for /ʃ/ but vibrate for /ʒ/

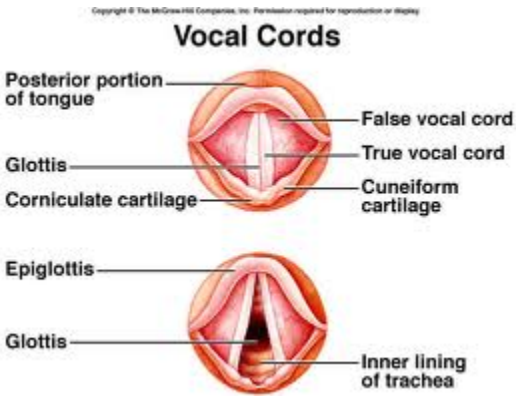


5. Glottal /h/

/h/ sound is produced by the air coming through a
narrow glottis with audible friction.

The soft palate is in its raised position.

The vocal Cords do not vibrate.



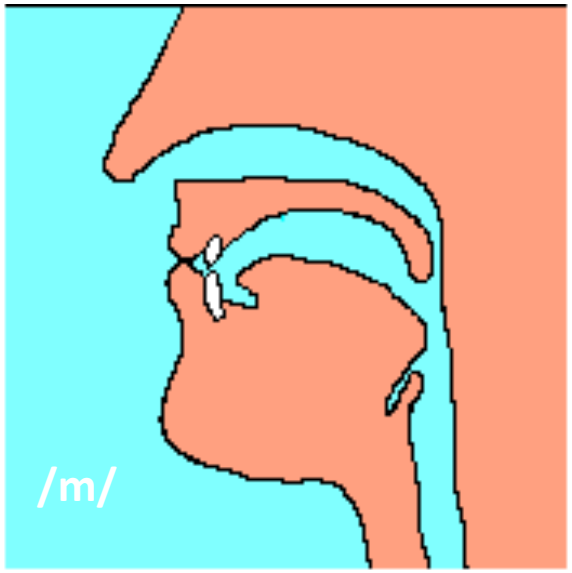
Examples : hay, here , heat

6. Nasals - . /m/, /n/, /ŋ/,

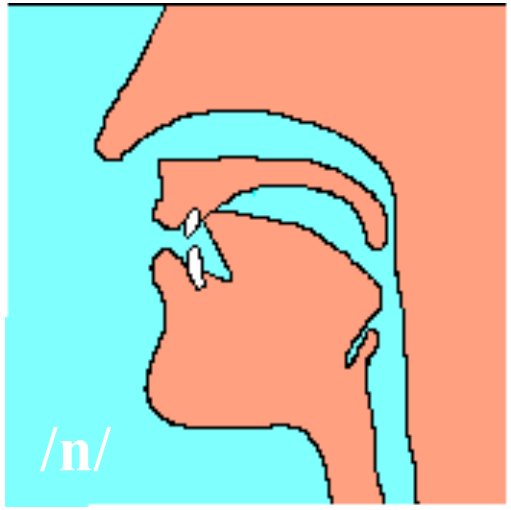
For /m/, the mouth is completely blocked by closing the lips

For /n/, it is blocked by raising the tip of the tongue against teeth ridge.

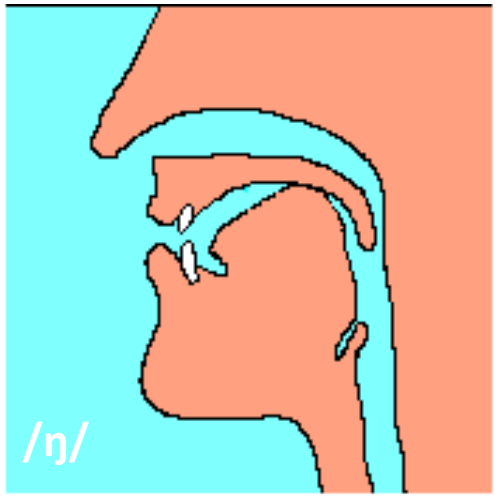
For /ŋ/, it is blocked by raising the back of the tongue to touch the soft palate



Bi-labial /**m**/



Alveolar /**n**/



Velar /**ŋ**/

The soft palate is lowered so that the air passes through the nose. The Vocal cords are made to vibrate in each case.

Lateral

The sound formed by means of a partial obstruction of the passage by the tongue at the centre of the mouth and allowing the air to pass freely one or both sides of the tongue . /l/.

7. Lateral : /l/

Two types of /l/

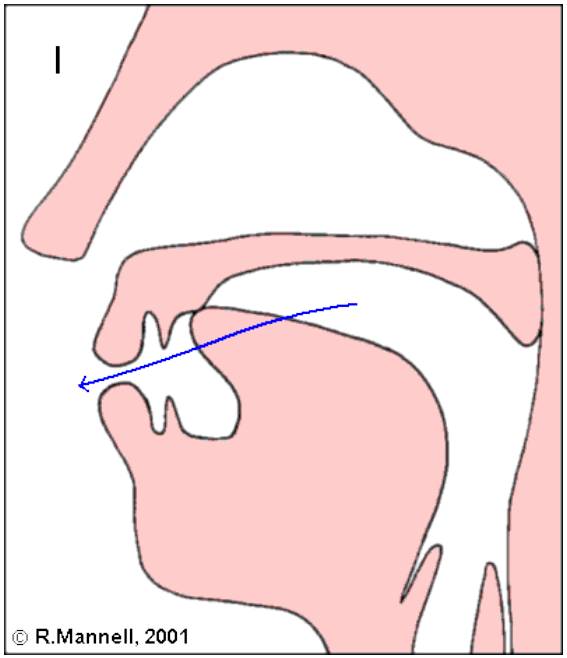
1. Clear /l/ - is used initially in a word and in the middle of a word before a vowel. E.g Lake , telling

2. Dark /l/ - is used in the middle of a word before a consonant
And at the end of a word. E.g. help , sell .

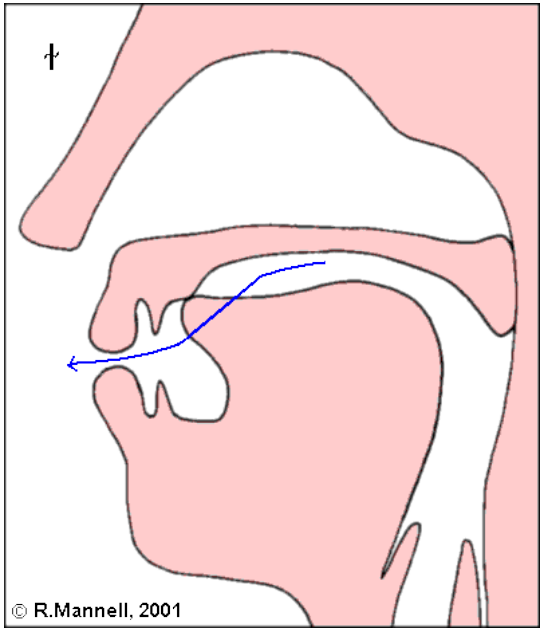
Lateral : /l/ Contd ……..

- The tip of the tongue is pressed against the teeth ridge in both types.
- There is a difference in the shape of the main body of the tongue.
- In Clear /l/ the tip of the tongue is raised towards hard palate.
- In Dark /l/ the back of the tongue is raised against soft palate.
- The tongue is contracted sideways and the air escapes at the side of the tongue.

The Vocal Cords vibrate



While saying Clear /l/



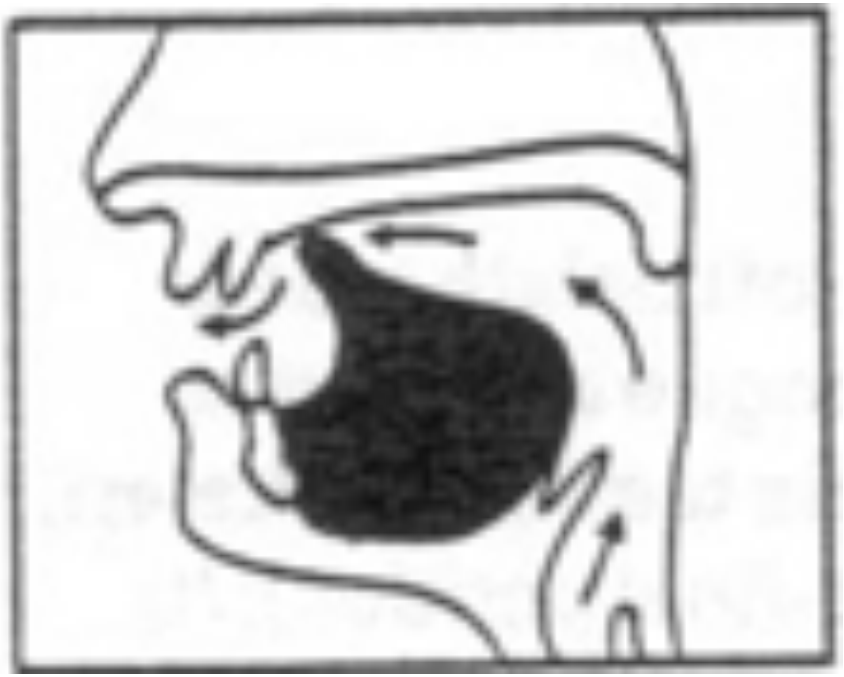
While saying Clear /l/

8. Frictionless Continuant

Post Alveolar /r/

The air passage is partially closed by raising the tip of the tongue against the back part of the teeth ridge. The tongue is however not in contact with the teeth ridge.

The soft palate is in a raised position.
The air escapes through the mouth without any friction.
The vocal cords vibrate.



Semi Vowels /w/ and /j/

Bi – Labial /w/ :

The back of the tongue is raised towards the soft palate.
The soft palate is in its raised position.
The lips are closely rounded.
The Vocal cords vibrate.

Palatal - /j/

The front of the tongue is raised towards the hard palate.
The lips are spread or neutral.
The Vocal cords vibrate.


Thank You!