

# Introduction to Linguistics – LANE 321

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CHAPTER 3 – THE SOUNDS OF LANGUAGE

## Introduction

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We have a new **seagh!!!**

## Introduction

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- They have a new **seagh**
- Would you understand this?
- *seagh* —————→ *chef*
- How did he come up with this spelling?
  - Take the 1<sup>st</sup> sound of the word 'sure',
  - the middle sound of the word 'dead',
  - and the final sound of the word 'laugh'



## Phonetics

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Remember:

Sounds of Spoken English



Letters of Written English

## Phonetics

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- Remember: the sounds of **spoken English** do not necessarily match up with letters of **written English**.
- How to solve this?
- One solution is to produce a separate alphabet with **symbols** that represent **sounds**.
- **The International Phonetic Alphabet (IPA)**

## Phonetics

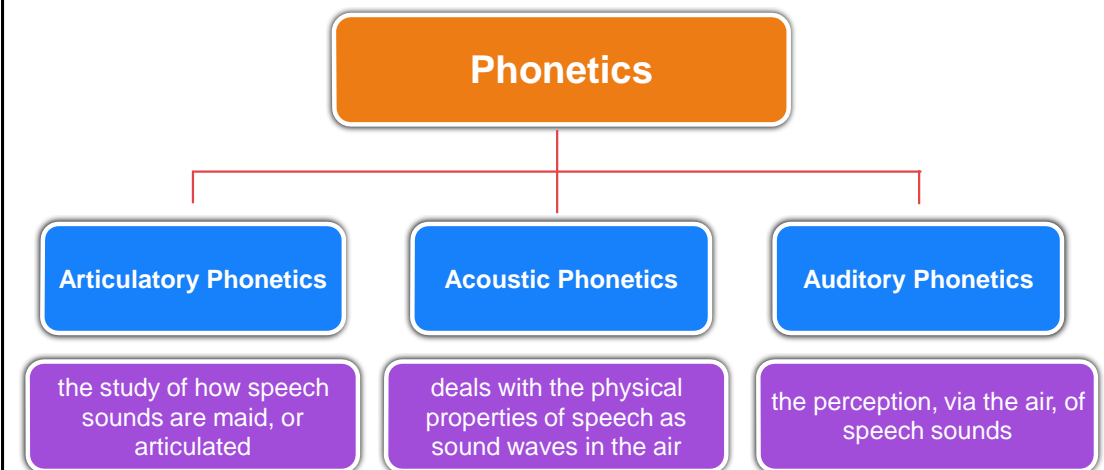
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- Knowledge of a language includes:
  - knowledge of sounds
  - how they are combined to form meaningful units
- Some sounds are found in one language but not another.
- All the sounds in the world constitute a limited set of the sounds that the human vocal tract can produce.

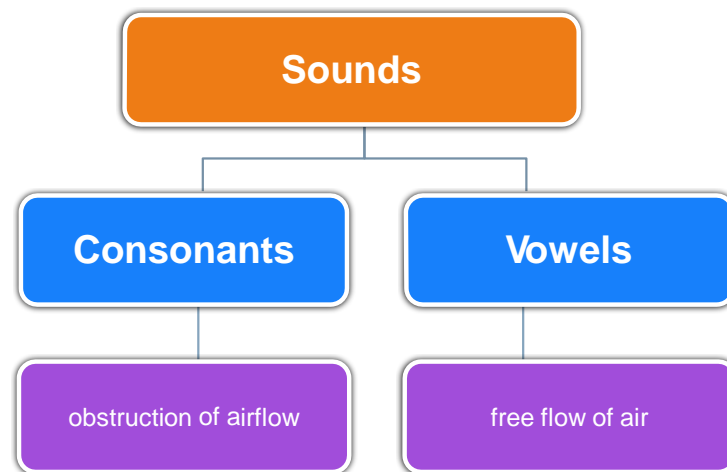
## What is phonetics?

**Phonetics:** the general study of the characteristics of speech sounds

## Main areas of phonetics



## Consonants & Vowels



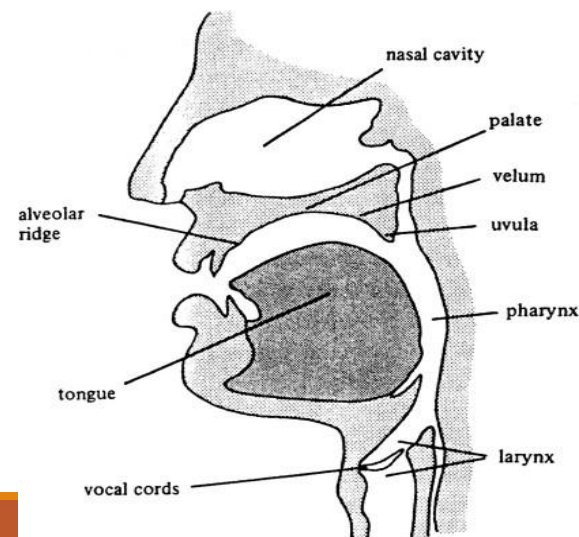
## Consonants

Consonants are classified by answering three questions

1. Voicing
2. Place of articulation
3. Manner of articulation

## Voiced and voiceless sounds (+v & -ve)

Air pushed —→ lungs —→ trachea —→ larynx

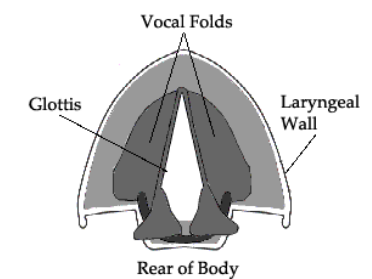


## Voiced and voiceless sounds

- Vocal cords are spread apart —→ air from lungs passes between them unimpeded (no vibration) (-v)
- Vocal cords are drawn together —→ air from lungs repeatedly pushes them apart as it passes through (vibration) (+v)

• Try it!

- Z-Z-Z-Z-Z
- V-V-V-V
- S-S-S-S
- F-F-F-F

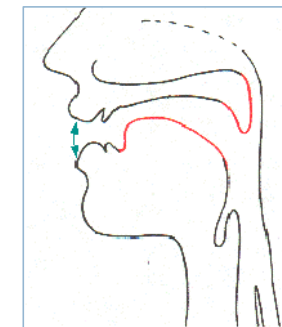


## Places of articulation

- Bilabials [b], [p], [m], [w]
- Labiodentals [f], [v]
- Dentals [θ], [ð]
- Alveolars [t], [d], [s], [z], [n], [l], [r]
- Palatals [j], [ʃ], [tʃ], [dʒ], [ɪ]
- Velars [k], [g], [ŋ]
- Glottals [h]

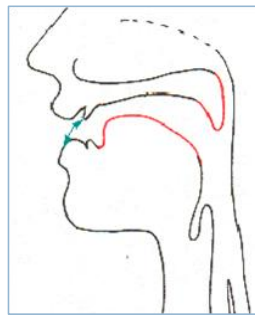
## Bilabials

- Sounds formed using both upper & lower lips.
- e.g.
  - pat \_\_\_\_ [p]
  - bat \_\_\_\_ [b]
  - mat \_\_\_\_ [m]
  - way/ walk/ world \_\_\_\_ [w]



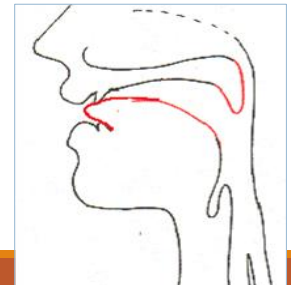
## Labiodentals

- upper teeth + lower lip
  - fat/ safe → [f]
  - vat/ save → [v]
- Q: How about... *cough* and *photo*?
- A: Despite the spelling differences
  - cough/ photo → [f]



## Dentals

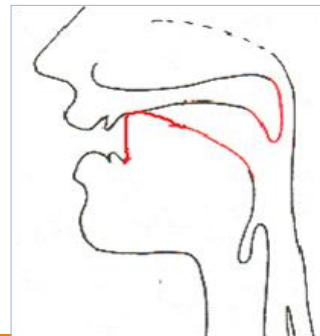
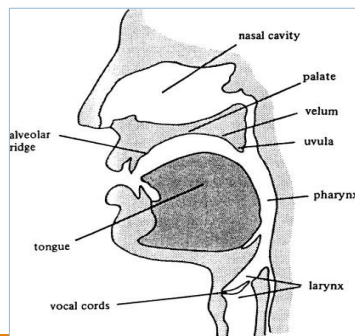
- By the tongue tip behind the upper front teeth
- e.g.
  - thin/ bath/ three teeth → [θ] (theta)
  - the/ there/ then/ thus/ feather/ bathe → [ð] (eth)
- Interdentals = tongue tip between upper & lower teeth





## Alveolars

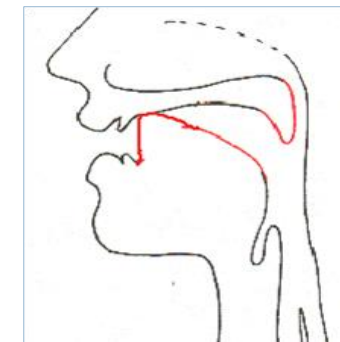
- Front part of tongue on the alveolar ridge
- **Alveolar ridge** = the rough ridge immediately behind & above the upper teeth.



## Alveolars

e.g.

- |                                 |     |
|---------------------------------|-----|
| • <b>t</b> op                   | [t] |
| • <b>d</b> ip                   | [d] |
| • <b>s</b> it                   | [s] |
| • <b>z</b> oo                   | [z] |
| • <b>n</b> ut                   | [n] |
| • <b>l</b> ap/ <b>l</b> it      | [l] |
| • <b>r</b> ight/ w <b>r</b> ite | [r] |



## Alveolars

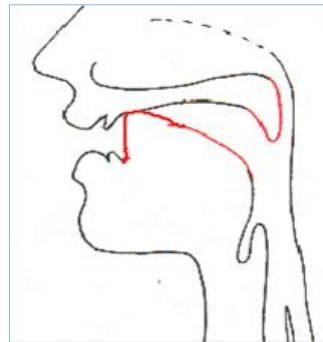
- bus [s]
- buzz [z]

Q: How about 'raise'?

A: [z]

OK.. How about..

- knot
- not
- [n]

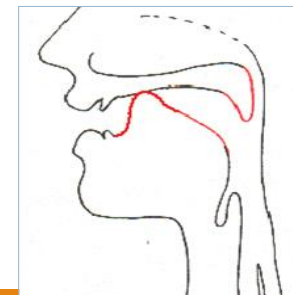
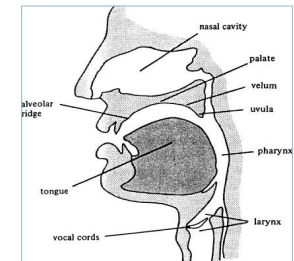


## Palatals (Alveo-palatals)

- Tongue + palate

e.g.

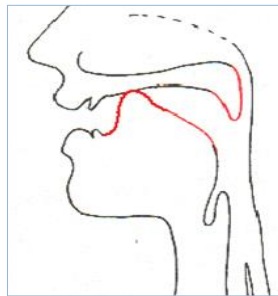
- shout [ʃ]
- child [tʃ]
- shoe-brush [ʃ]
- church [tʃ]



## Palatals (Alveo-palatals)

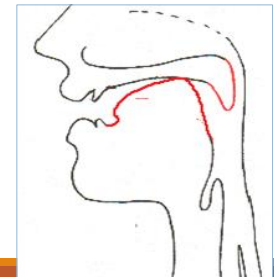
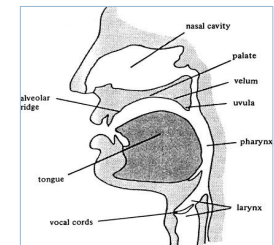
- [ʃ] – not very common in English
- e.g.
  - treasure/ pleasure/ rouge
- [dʒ]
- e.g.
  - joke/ gem
  - George
  - judge
- [j]
  - you/ yet

Despite differences in spelling



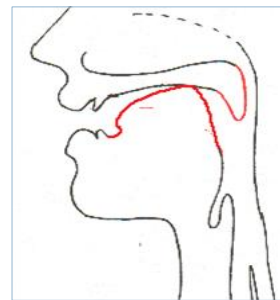
## Velars

- Back of the tongue + soft palate (velum)
- [k]
  - kill/ kid
  - cold/car
  - cook/ kick/ coke
- [g]
  - go/ gun/give
  - bag/ mug
  - plague



## Velars

- The velum can be lowered to allow air to flow through the nasal cavity.
- [ŋ] (angma)
- In written English this letter is normally spelled as 'ng'
- e.g.
  - sing
  - sang
  - tongue
  - ringing
  - bang



## Glottals

- No active use of the tongue and other parts of the mouth.
- The glottis (space between vocal cords & larynx)
- The glottis is open
- [h]
- e.g.
  - have/ house
  - who/ whose

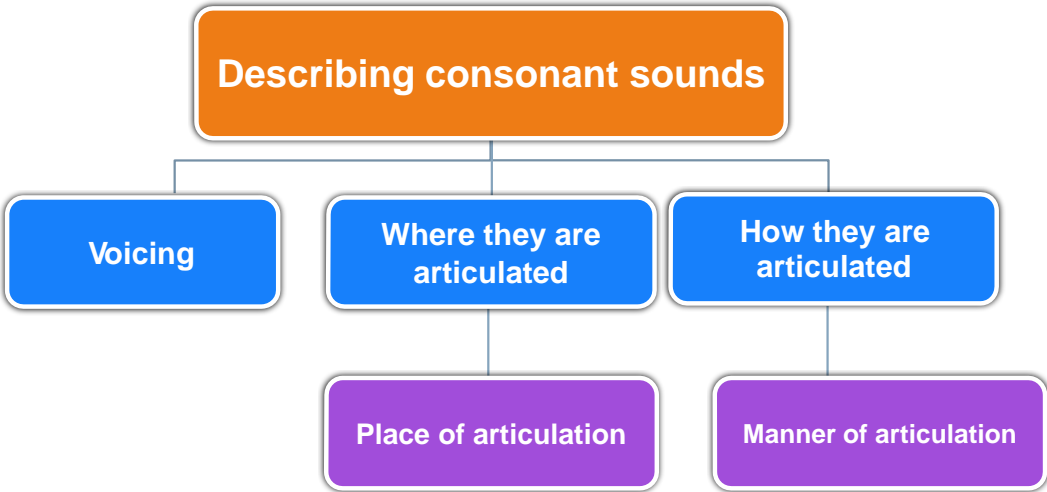
# Consonants Chart

	Bilabial		Labiodental		Dental		Alveolar		Palatal		Velar		Glottal	
	-V	+V	-V	+V	-V	+V	-V	+V	-V	+V	-V	+V	-V	+V
Stops	p	b					t	d			k	g		
Fricatives			f	v	θ	ð	s	z	ʃ	ʒ			h	
Affricates									tʃ	dʒ				
Nasals		m						n			ŋ			
Liquids								l	r					
Glides		w								j				

# Recap

- What is phonetics?
- What are the main branches of phonetics?
- How can we classify sounds?
- What are some of the places of articulation for the consonants of the English language?

# Recap



# IPA

Place of Articulation

	Bilabial		Labiodental		Dental		Alveolar		Palatal		Velar		Glottal	
	-V	+V	-V	+V	-V	+V	-V	+V	-V	+V	-V	+V	-V	+V
Stops	p	b					t	d			k	g		
Fricatives			f	v	θ	ð	s	z	ʃ	ʒ				
Affricates									tʃ	dʒ				
Nasals		m						n				ŋ		
Liquids								l,r						
Glides		w								j				h

Manner of Articulation

Manner of Articulation

## Manner of Articulation

- Stops [p], [b], [t], [d], [k], [g]
- Fricatives [f], [v], [θ], [ð] [s], [z], [ʃ], [ʒ], [h]
- Affricates [tʃ] & [dʒ]
- Nasals [m], [n], [ŋ]
- Liquids [l] & [r]
- Glides [w] & [j]

## Stops (Plosives)

- [p], [b], [t], [d], [k], [g]
- **stopping** the airstream (very briefly) —. letting it go abruptly
- **Q: How can we fully describe the sound [t] in *ten*?**
  - V+ or –V
  - Where? Place of Articulation?
  - How? Manner of Articulation?
- **A: [t] is a voiceless alveolar stop.**



## Fricatives

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- [f], [v], [θ], [ð] [s], [z], [ʃ], [ʒ], [h]
- Almost blocking the airstream and having the air pushed through a very narrow opening.
- As the air is pushed through, a type of **friction** is produced.
- e.g.
  - **Fish**
    - begins & ends with the voiceless fricative [f] & [ʃ]
  - **Those**
    - begins & ends with the voiced fricative [ð] & [z]
  - **Hi, Hello**
    - both begin with the voiceless fricative [h]

## Affricates

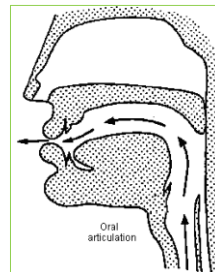
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- [tʃ] & [dʒ]
- It is the combination of a brief stopping of the airstream with an obstructed release which causes some friction.
- A **stop** followed by a **fricative**
- e.g.
  - **Cheap**
  - [tʃ] is a voiceless affricate
    - **Jeep**
  - [dʒ] is a voiced affricate



## Nasals

- [m], [n], [ŋ]
- Most sounds are produced **orally**, with the velum raised, preventing airstream from entering the **nasal** cavity.
- When the velum is lowered, the airstream is allowed to flow through the nose.



## Nasals

- They are all voiced
- e.g. (**morning**/ **knitting**, **name**)
- They all begin & end with nasals.

Word	Sound	Voice	Place of Articulation	Manner of articulation
<b>m</b> orning	[m]	V+	Bilabial	Nasal
mor <b>ni</b> ng	[ŋ]	V+	Velar	Nasal
<b>n</b> ame	[n]	V+	Alveolar	Nasal
na <b>m</b> e	[m]	V+	Bilabial	Nasal
<b>k</b> nit <b>ti</b> ng	[n]	V+	Alveolar	Nasal
knit <b>ti</b> ng	[ŋ]	V+	Velar	Nasal

## Liquids

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- [l] & [r]
- both voiced
- [l] = A lateral liquid
- Letting the airstream flow around the sides of the tongue as the tip of the tongue makes contact with the middle of the alveolar ridge.
- [r]
- The tongue tip raised and curled back near the alveolar ridge.

## Liquids

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Q: How do we describe the first sounds in the words 'led' and 'red'?

Word	Sound	Voice	Place of Articulation	Manner of Articulation
led	[l]	V+	Alveolar	Liquid
red	[r]	V+	Alveolar	Liquid

## Glides

- [w] & [j]
- They are both voiced
- The tongue is in motion or **gliding to** or **from** the position of a vowel.
- Semi-vowels

Word	Sound	Voice	Place of Articulation	Manner of Articulation
wet/ we	[w]	V+	Bilabial	Glide
you/ yes	[j]	V+	Palatal	Glide

## The Glottal Stop [ʔ]

- When the space between the vocal cords (the glottis) is closed, then released.
- Cockney accent/ Scottish speakers/ New Yorkers
- e.g.
  - Oh oh / Uh uh
  - In place of *t* ———. Bat**t**man
  - In place of *tt* ———. bott**l**e / butt**o**n

## The flap [D] or [r]

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- The tongue tip tapping the alveolar ridge briefly
- butter = budder
- Many American English speakers tend to flap the [t] & [d] consonants between vowels
- In casual speech:
  - latt<sup>er</sup>/ ladd<sup>er</sup>
  - writ<sup>er</sup>/ rid<sup>er</sup>
  - met<sup>al</sup>/ med<sup>al</sup>

## What is a vowel?

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- consonants → closure or obstruction in the vocal tract,
- vowel sounds → a relatively free flow of air
- They are all voiced

## Describing Vowels

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How do we describe/ classify consonants?

- Voicing
- POA
- MOA

## Describing Vowels

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How do we describe/ classify vowels?

- How **high** is the highest part of the tongue in the mouth?
- How **front** or **back** is the highest part of the tongue in the mouth?
- Are the lips **rounded** or **unrounded**?

## Describing Vowels

- How **high** is the highest part of the tongue in the mouth?
  - High
  - Mid
  - Low
- How **front** or **back** is the highest part of the tongue in the mouth?
  - Front
  - Central
  - Back

## Describing Vowels

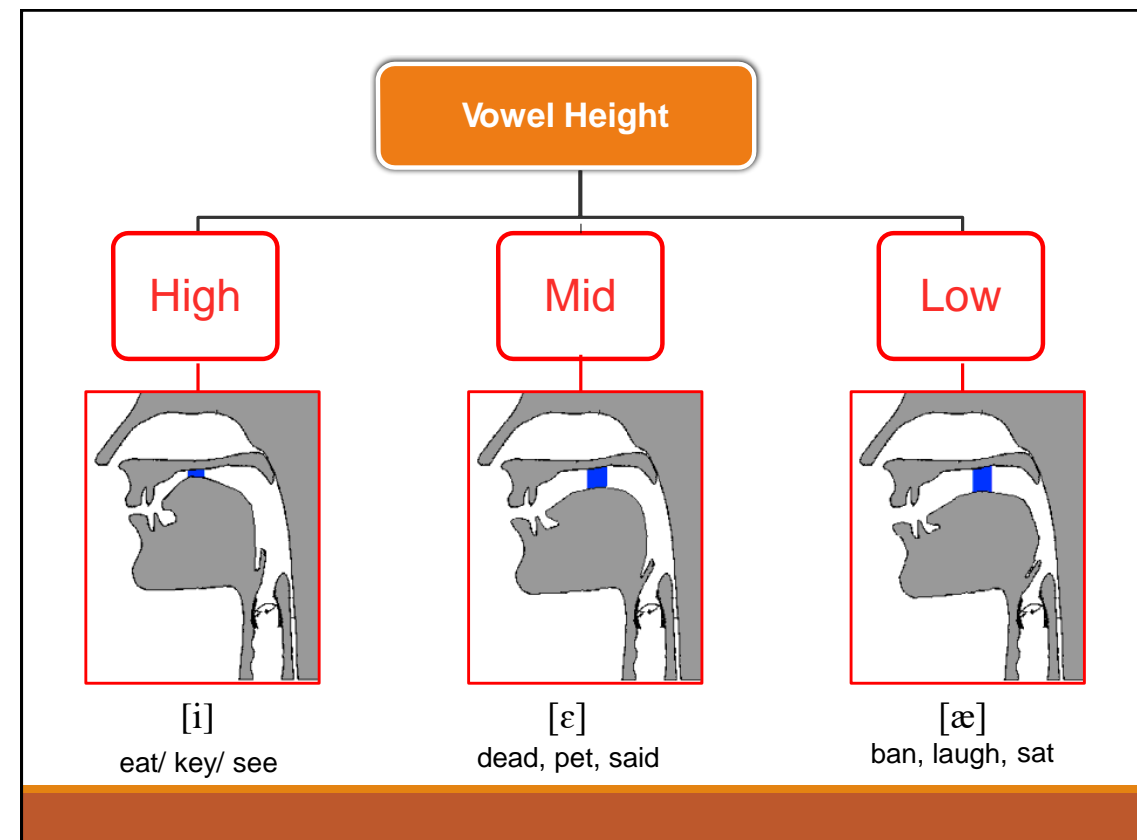
	Front	Front	Central	Back
High		i		u
		ɪ		ʊ
Mid		e	ə	o
		ɛ	ʌ	ɔ
Low		æ	a	ɑ

Figure 3.3

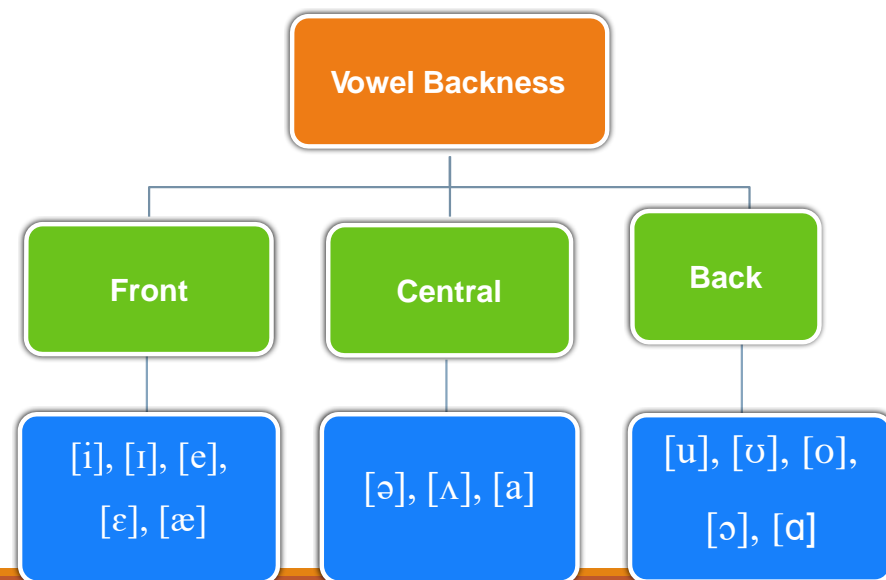
## Describing Vowels

Try this:

- *heat, hit, hat, hot*



## Vowel Backness



## Front Vowels

- [i], [ɪ], [e], [ɛ], [æ]

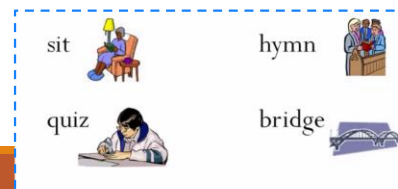


## Front Vowels

- [i]  
• e.g. **eat** / **see** / **week** / **tree**

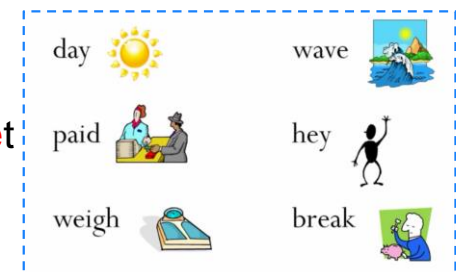


- [ɪ]  
• e.g. **hit**, **myth**, **women**, **in** ite, **pin**

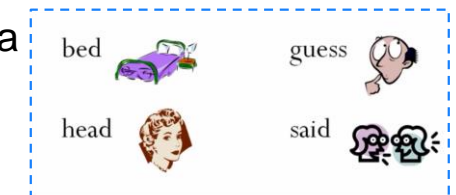


## Front Vowels

- [e]  
• e.g. **great**, **eight**, **locate**, **ballet**



- [ɛ]  
• e.g. **dead**, **pet**, **said**, **bet**, **extra**



## Front Vowels

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- [æ]
- e.g. ban, laugh, sat, at, glass

bag



snack



fast



cat



## Central Vowels

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- [ə], [ʌ], [a]

## Central Vowels

---

- [ə]
  - e.g. **a**bove, sof**a**, su**pp**ort, ze**br**a (British)
  - farm**er**, wat**er**fall
- [ʌ]
  - e.g. bl**oo**d, tou**gh**, su**n**, bu**t**, hu**t**, so**n**
- [a]
  - e.g. bo**m**b, sw**a**n (American), pa**th** (British)

## Back Vowels

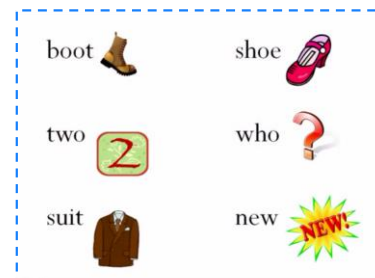
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- [u], [ʊ], [o], [ɔ], [ɑ]

## Back Vowels

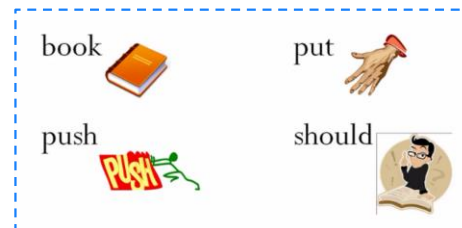
- [u]

- e. g. move/ two/ too / dr w



- [ʊ]

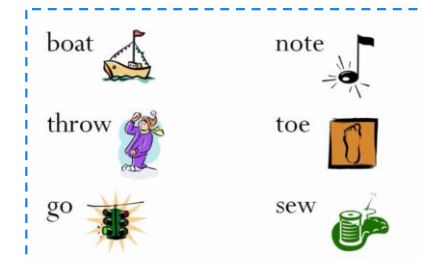
- e.g. could, foot, put



## Back Vowels

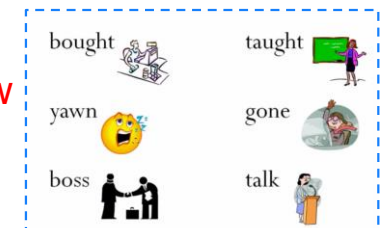
- [o]

- e.g. no, road, toe, hello, o er



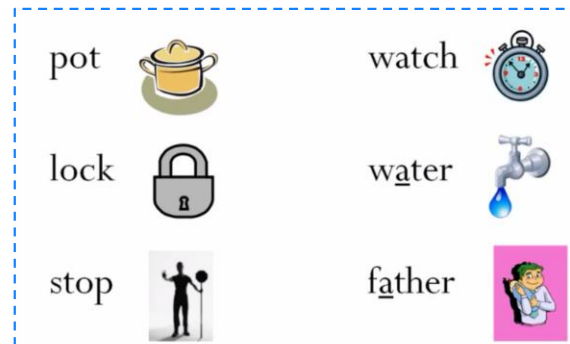
- [ɔ]

- e.g. ball, caught, raw, all, hall, jaw



## Back Vowels

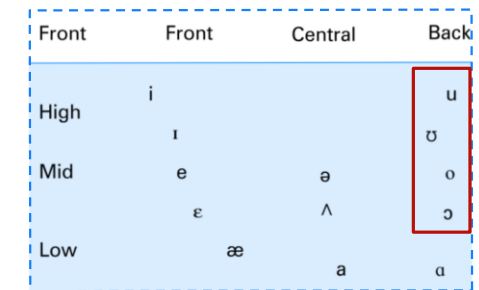
- [ɑ]
- e.g. spa, father, clock, awkward



## Lip Roundedness

- **Rounded** [u], [ʊ], [o], [ɔ]

- [u] e.g. *noon*



- **Unrounded** [i], [ɪ], [e], [ε], [æ], [ɑ], [ə], [a], [ʌ]

- [i] e.g. *heat*

## Diphthongs

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- A combination of two sounds
- begins with a vowel & ends with a glide [w] or [j]
- vowel + glide
  - [aw]
    - cow, down, loud, doubt
  - [ɔj]
    - boy, toy, noise, void
  - [aj]
    - ride, high, bye, eye, my

## Activity: Identifying diphthongs

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Call	Top	Fright	Joy
Haste	Avoid	Proud	Hide

- |          |      |
|----------|------|
| • Fright | [aj] |
| • Joy    | [ɔj] |
| • Avoid  | [ɔj] |
| • Proud  | [aw] |
| • Hide   | [aj] |

## Vowels' full description

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- Vowels are classified according to three parameters:  
height, backness, and lip rounding
- e.g.
  - [i]
- high front unrounded vowel
- [u]
- high back rounded vowel

## Phonetic Transcription

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- The best-known system:
  - **The International Phonetic Alphabet (IPA)**
- IPA has been developing since 1888.
- The system represents each sound of human speech with a single symbol.
- The symbol is enclosed in brackets [ ] or / /.

## Phonetic Transcription

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- We can use IPA transcription across languages
- There is one symbol for EVERY possible human sound
- There is a 1-1 correspondence of sound to symbol
  - Cat —→ [kæt]
  - Cell —→ [sɛl]

## Transcription Practice

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Transcribe the following words

- Kick
- Boot
- She
- The
- Thin
- [kIk]
- [but]
- [ʃi]
- [ðə]
- [θɪn]



## References

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Alroqi, Haifa. LANE 321 Introduction to linguistics lecture notes. King Abdulaziz University, 2015.

Thank you