

English Phonetics and Phonology

Lesson 3B

Consonant sounds

BREAKFAST

- /b/
- /r/
- /k/
- /f/
- /s/
- /t/

Speech sounds can be divided into three main types:

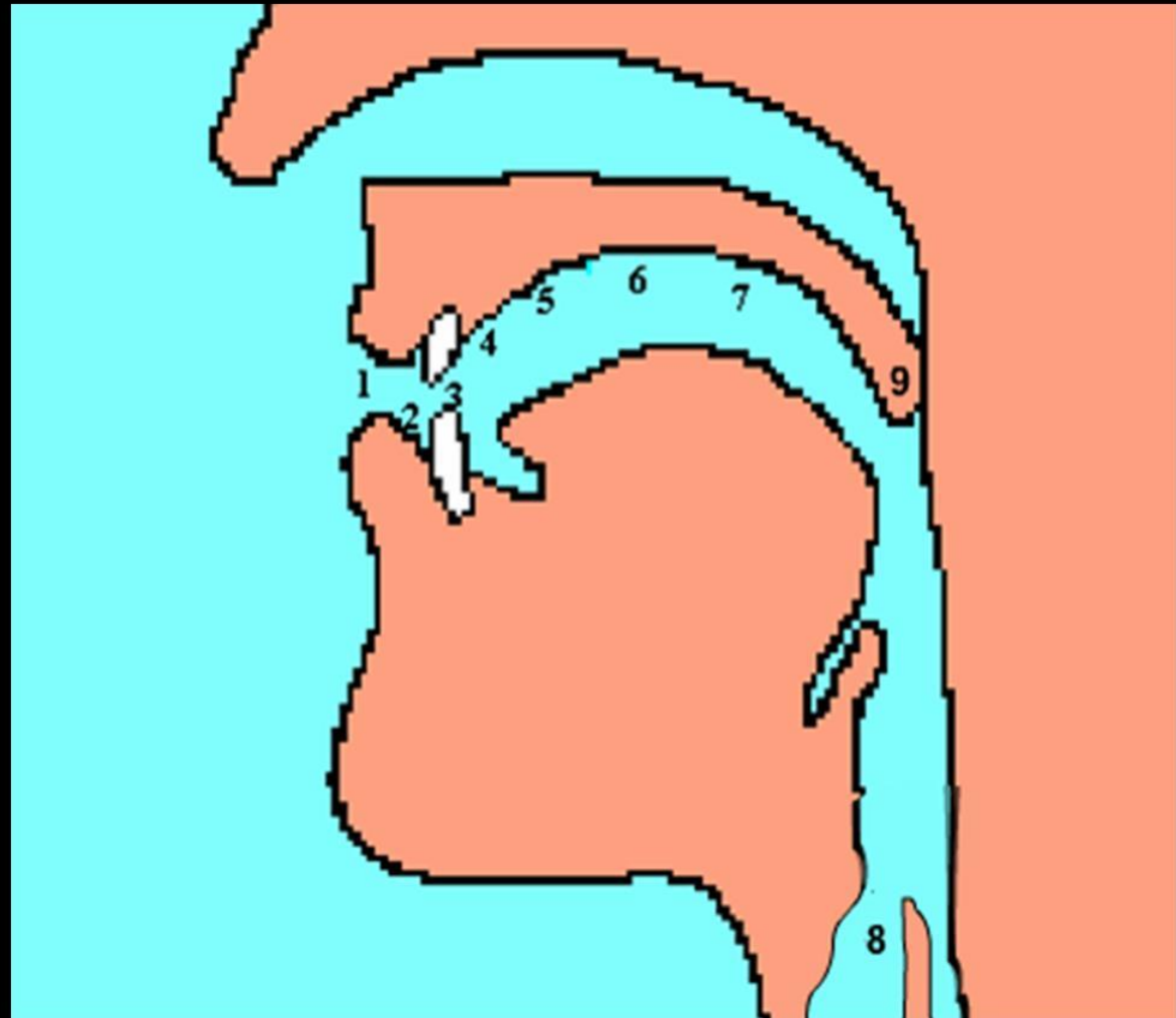
- Stops (or plosives) and affricates
- Fricatives
- Vowels and approximants

We will first focus on stops and fricatives which are classified according to

- The place in which they are articulated
- Whether they are voiced or not (vibration of vocal folds)
- Whether they are oral or nasal (for stops only)

Places of articulation

1. Bilabial (lips)
2. Labio-dental (lips-teeth)
3. Interdental
Dental (teeth)
4. Alveolar ridge
5. Post-alveolar
6. Palatal (palate)
7. Velar (velum)
8. Glottal (glottis)
9. Uvula (uvulum)



Voicing: A consonant may be

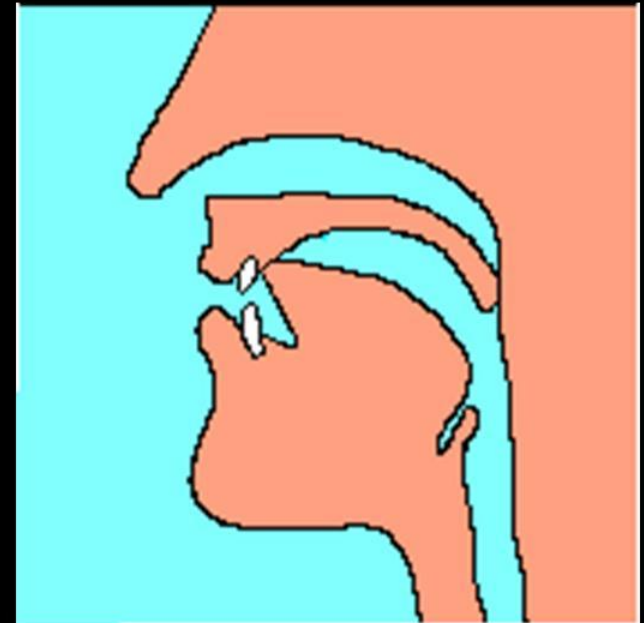
- Voiced (lenis)
- Voiceless (fortis)

A stop is composed of three phases

- Closure
- Hold (the passage of air from the lungs is blocked)
- Release – the difference in air pressure between the area behind the closure and the atmosphere results in a small explosion

The place of articulation is where the passage of air is blocked

- For example /t/ and /d/ are both produced by blocking the passage of air at the **alveolar ridge/dental region**



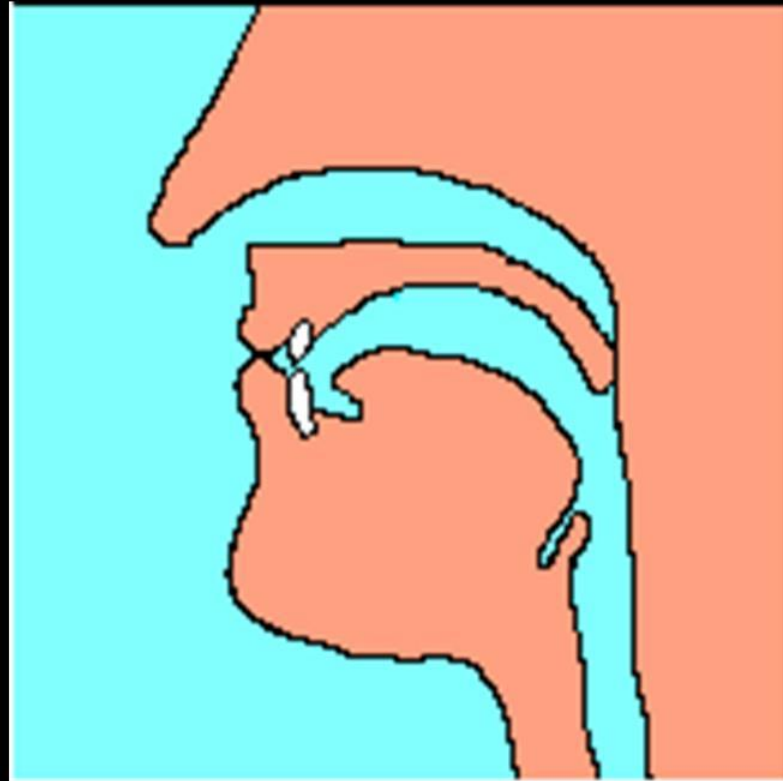
English plosives (stops)

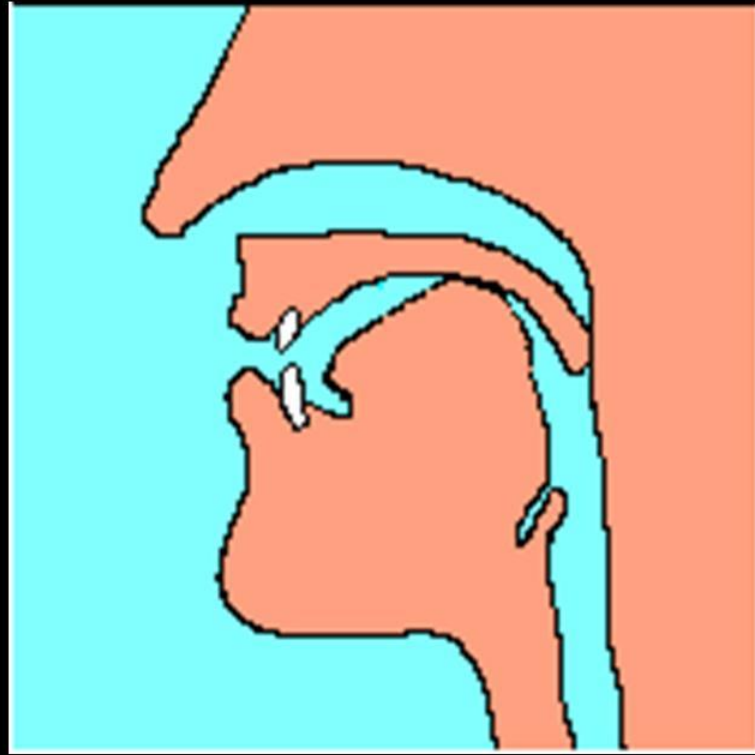
- /p/ and /b/ are voiceless and voiced bilabials i.e. produced with both lips
- /t/ and /d/ are voiceless and voiced alveolars
- /k/ and /g/ are voiceless and voiced velars

What consonant pair is this?

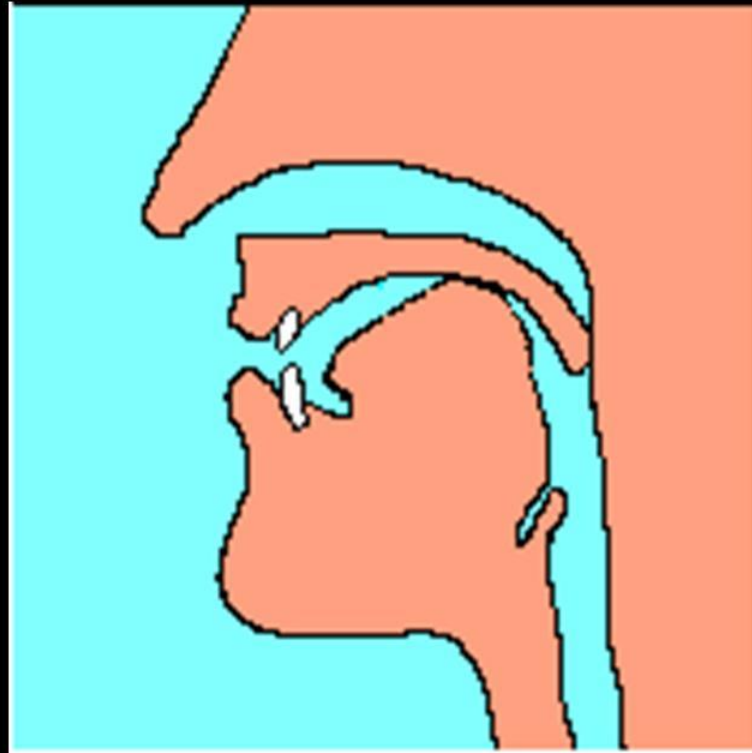


That's right! /p/, /b/

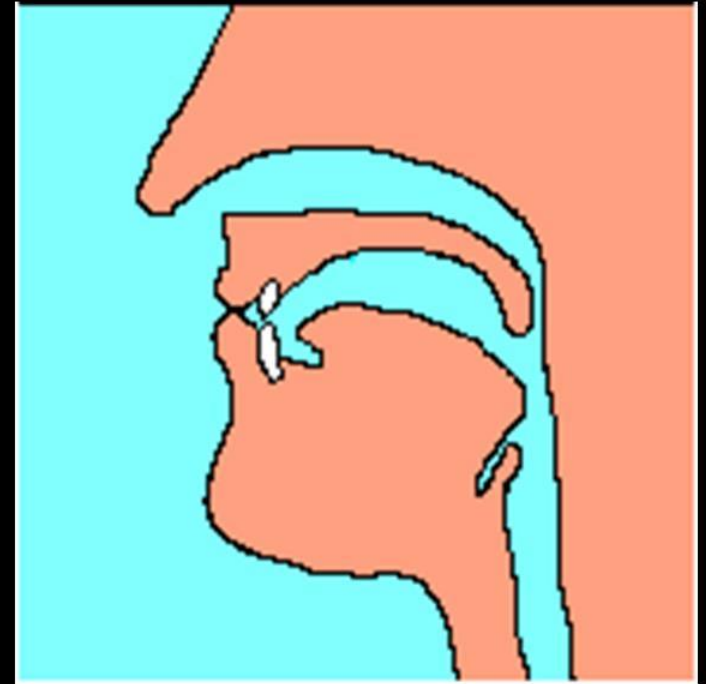
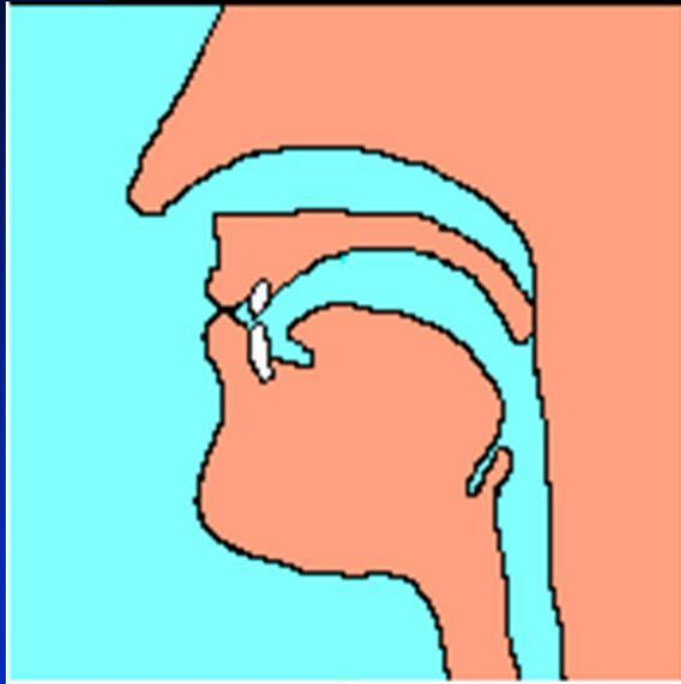




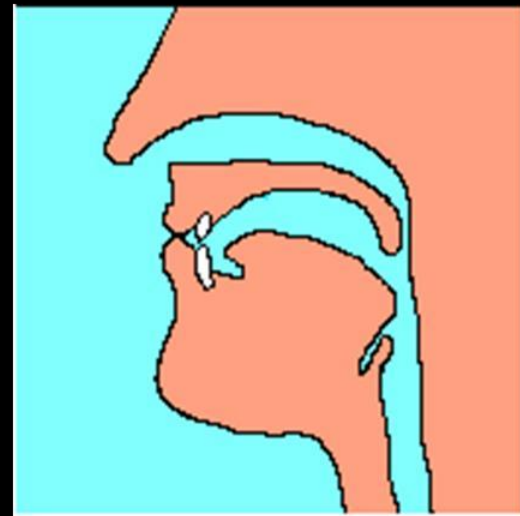
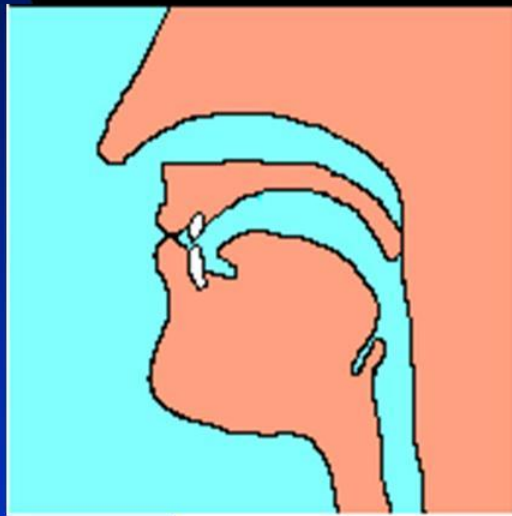
/k/, /g/



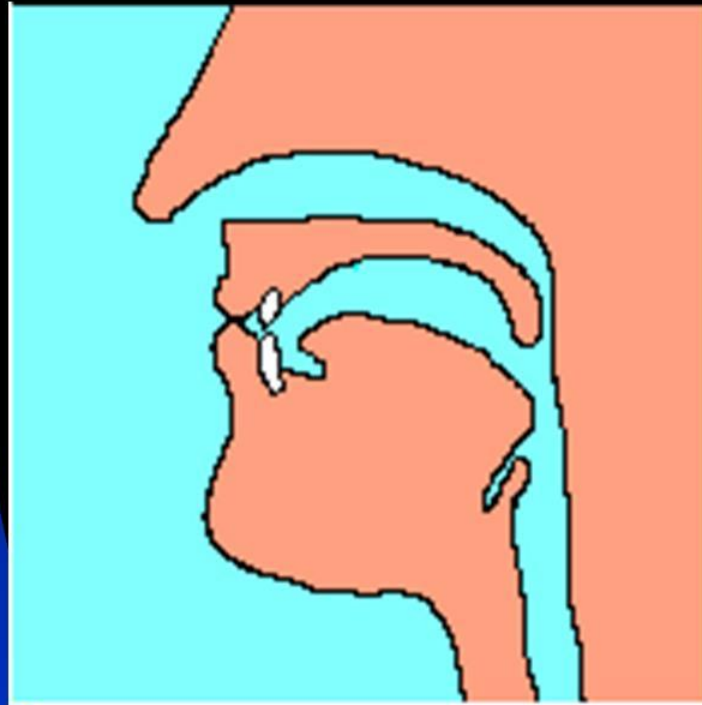
**What is the difference
between these two
slides?**



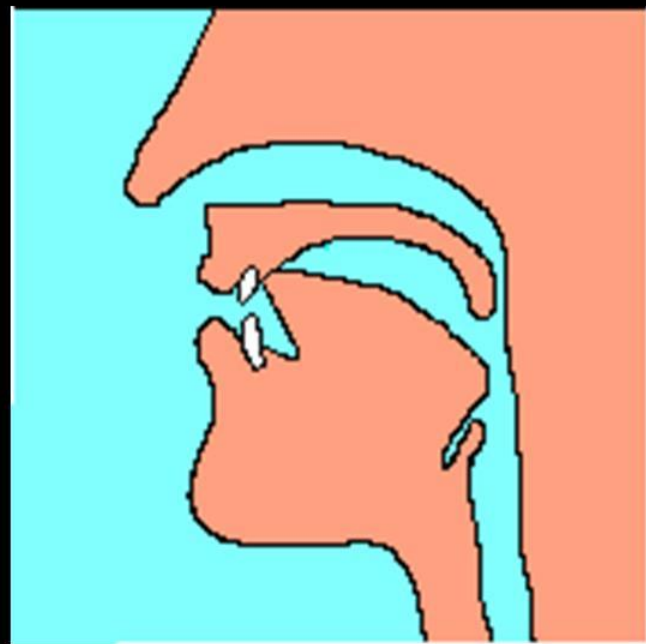
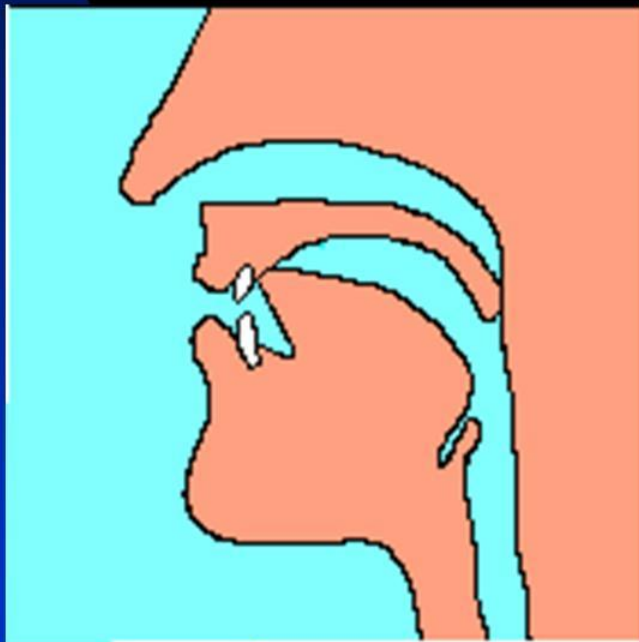
In the first (/b/, /p/) the passage of air to the nose is blocked by the raised velum, in the second this passage is open, giving us a nasal. What consonant is it?



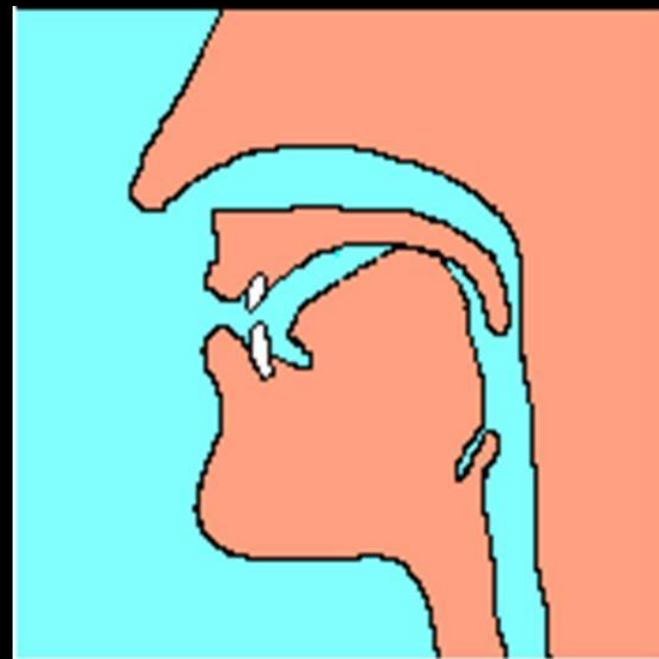
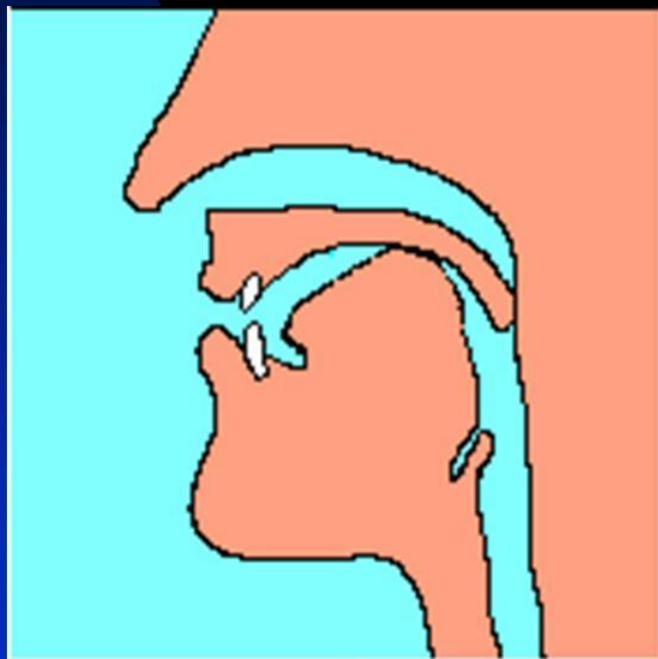
It's /m/



Let's look at other positions – in the alveolar position we have /t/ and /d/, and the nasal /n/:



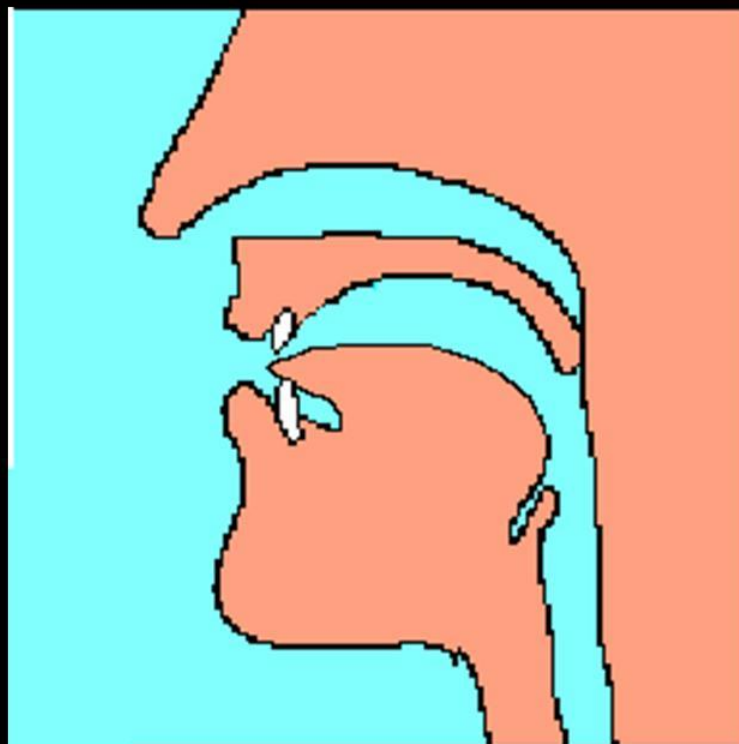
In a similar way at the velum we
have /k/ and /g/, and the nasal /
ŋ/:



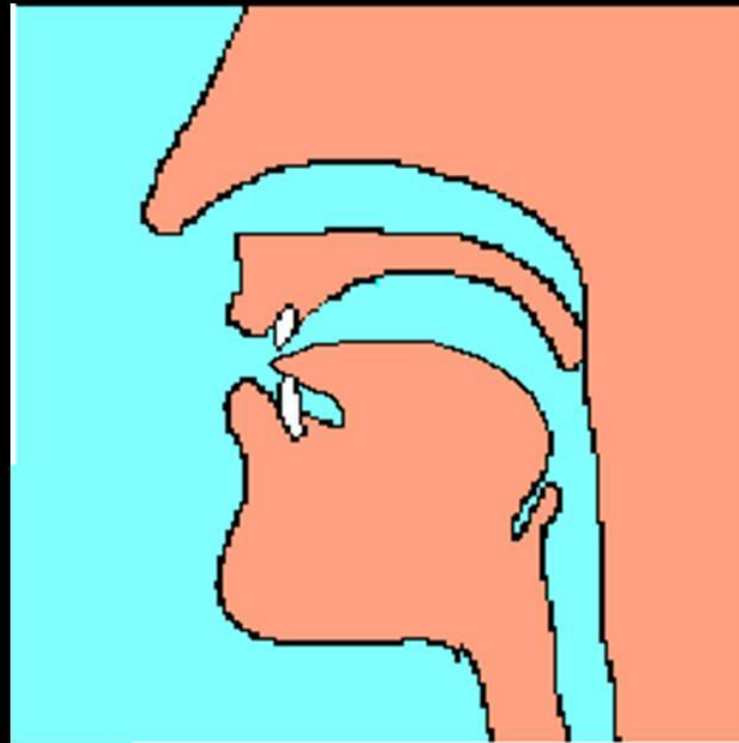
Fricatives

- Are created by forming a constriction through which air from the lungs may pass, but not freely.
- This lack of freedom causes audible turbulence, or friction, hence the name fricative.
- As for stops they may be voiceless or voiced .

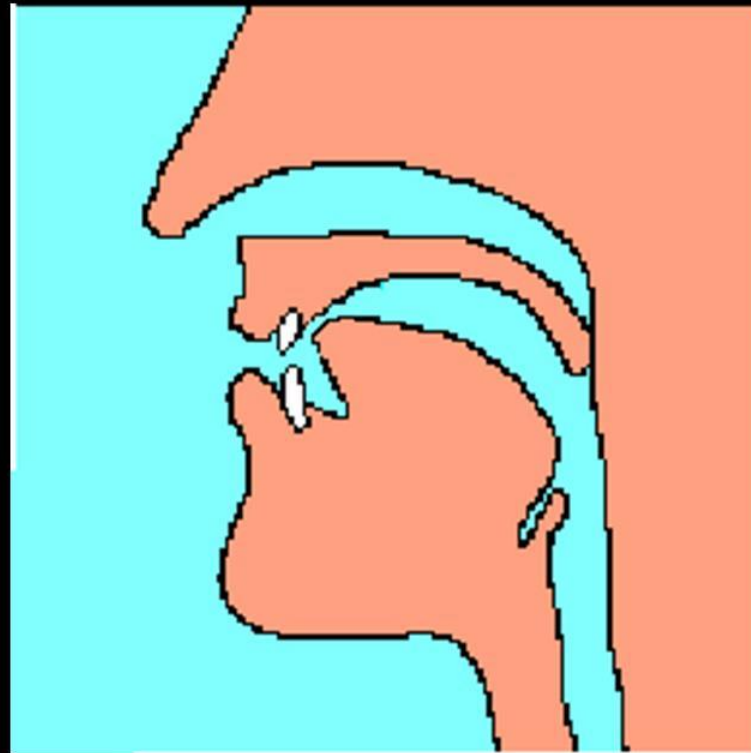
Let's look at a fricative pair which
causes non-native speakers of English
a lot of trouble / θ / and / ð /



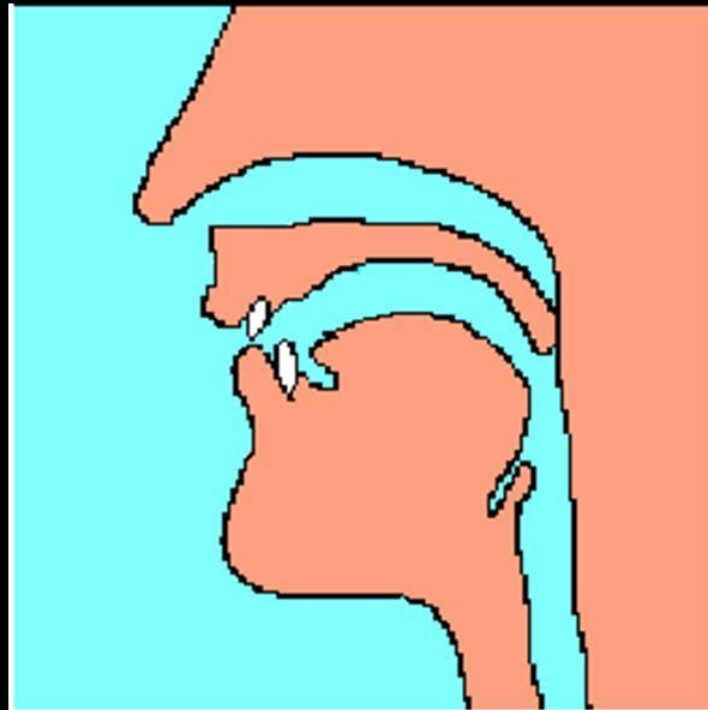
Air passes through a small gap between the tongue and the upper teeth causing a low friction sound:



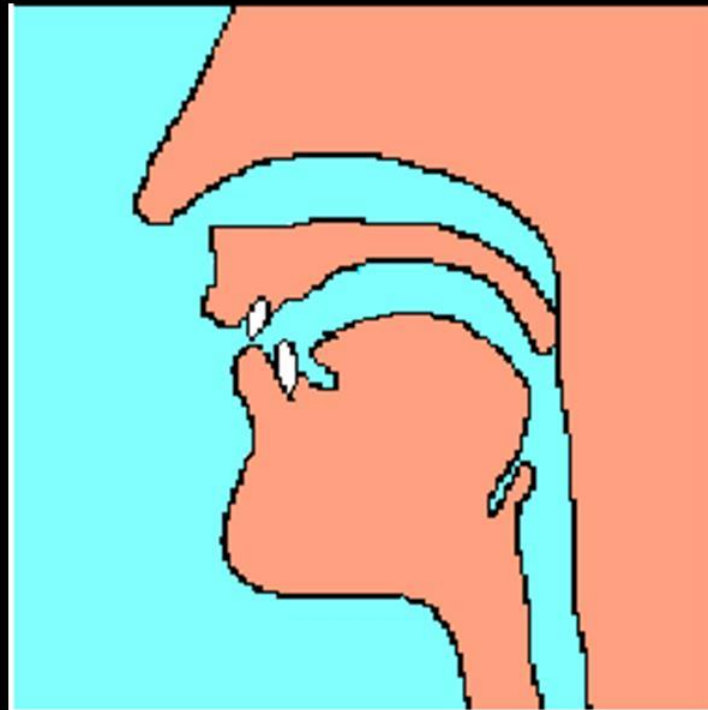
In the alveolar fricatives /s/ and /z/, the friction noise is quite loud, as air hits the upper teeth causing a hiss.



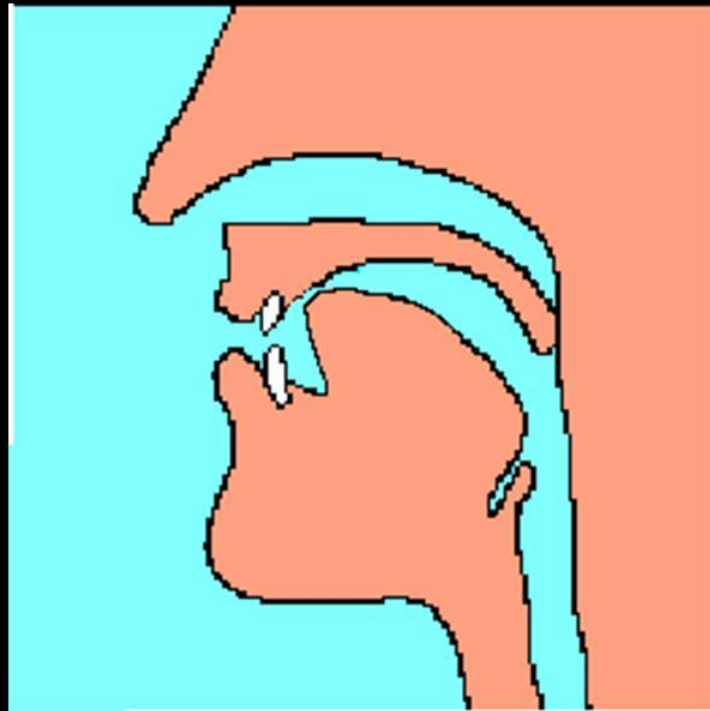
What fricative pair is represented here?



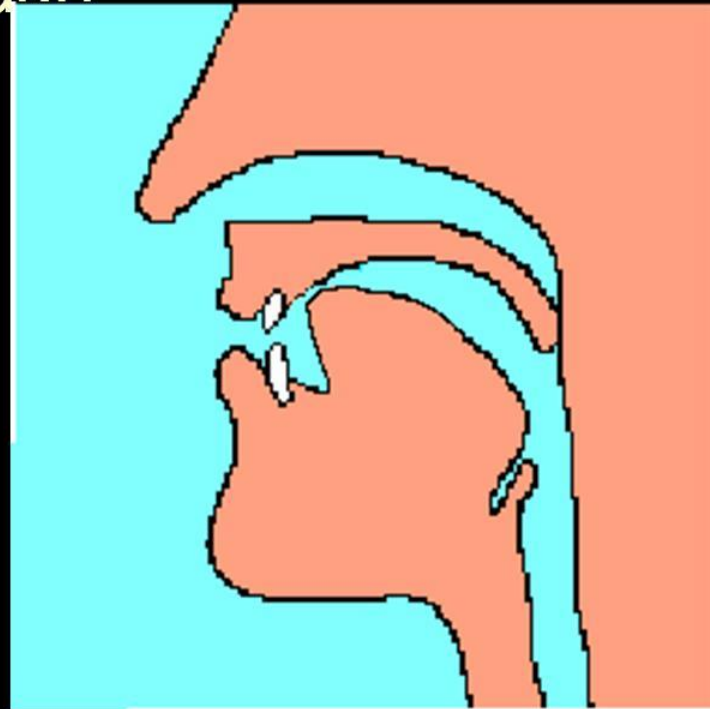
That's right - /f/, and /v/



And here?



This is the post-alveolar pair /
and / . Note that a small shift of
the tongue from the /s/, /z/ position
directs the flow of air onto the alveolar
ridge



Affricates

**These may be
considered as stop +
fricative**

An affricate is composed of the following stages

- Closure
- Hold
- A small opening instead of the complete opening of the stop.
- This small opening causes friction just like a fricative

Affricates - articulation

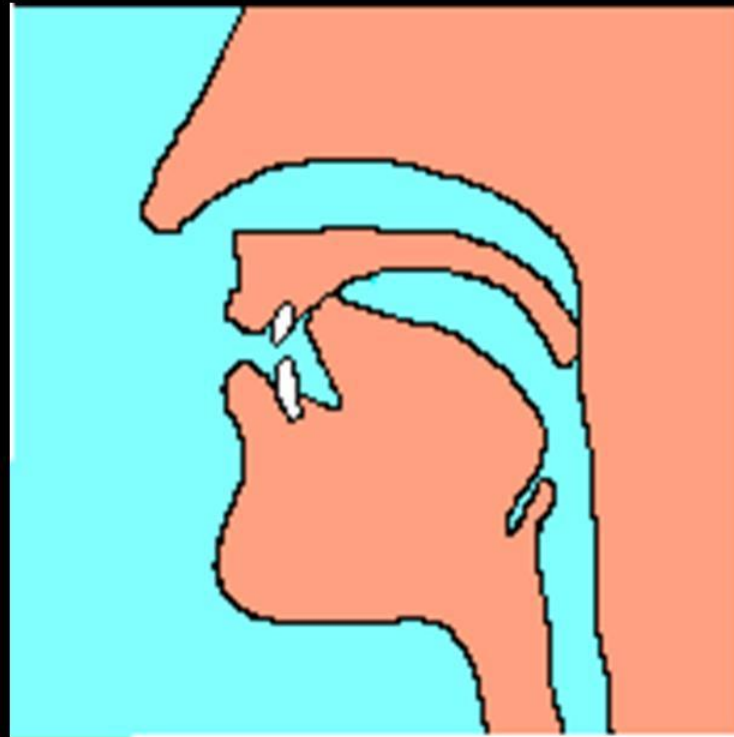
- The place of articulation is always the same for both stages
- Affricates are always either voiced or unvoiced

In English we have two affricates:

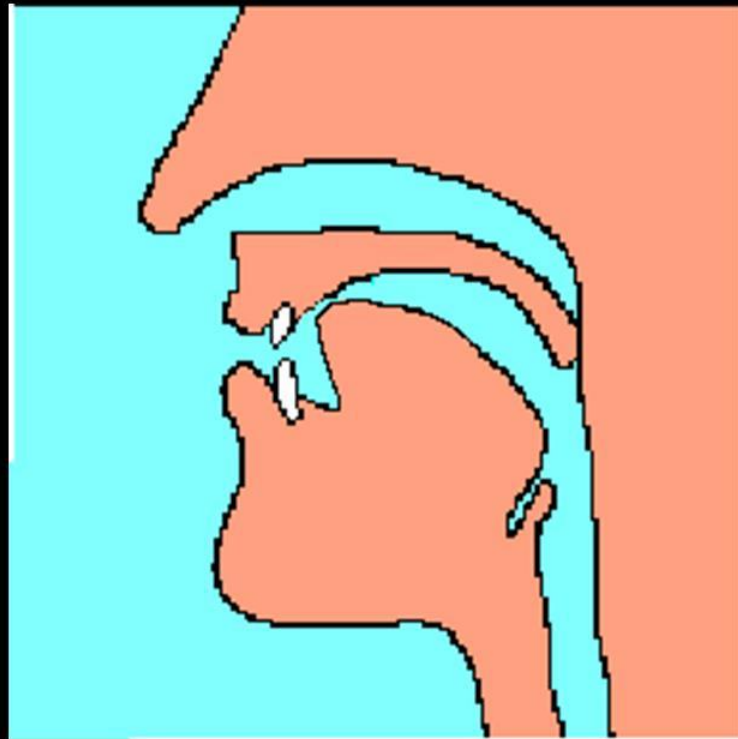
- / tʃ / *church* and / dʒ / *George*
- Both are realised in the post-alveolar position

Here are the two main phases.

1. Hold



2. Release with constriction



Here is the IPA consonant chart

(PULMONIC)	Bilabial	Labioden	Dental	Alveolar	Postalv	Retroflex	Palatal	Velar	Uvular	Pharyngl	Glottal
Plosive	p b		t d			ʈ ɖ	c ɟ	k ɡ	q ɢ		ʔ
Nasal	m	ɱ	n			ɳ	ɲ	ŋ	ɴ		
Trill	ʙ		r						ʀ		
Tap or Flap			ɾ			ɽ					
Fricative	ɸ β	f v	θ ð	s z	ʃ ʒ	ʂ ʐ	ç ʝ	x ɣ	χ ʁ	ħ ʕ	h ɦ
Lat. Fricative			ɬ ɮ								
Approximant	w	ʋ	ɹ			ɻ	j	ɰ			
Lat. Approx.			ɭ			ɮ	ʎ	ʟ			

White represents standard British English consonants, light blue possible allophones, and dark blue exotic consonants



Any questions ???

<http://davidbrett.uniss.it/index>

- These slides were produced by David Brett, a phonetics expert who teaches at the University of Sassari. If you want to practice consonant sounds, then log on to his website (address above), then:
 - click on “The articulation of speech sounds” in the Index
 - click on “Match phonemes with pictures”
 - do the exercises for “Consonants: diagrams, symbols and definitions”

THESE EXERCISES WILL HELP YOU A LOT TO
PRACTICE FOR YOUR EXAM