IPA review
Websites for IPA practice

- http://ipa.typeit.org/
- http://webspace.ship.edu/cgboer/phonetics.html
- http://phonetics.ucla.edu/vowels/contents.html
- http://accent.gmu.edu/browse_language.php
- http://www.uiowa.edu/~acadtech/phonetics/english/frameset.html
- http://www.unc.edu/~jlsmith/pht-url.html#(0)
- http://www.agendaweb.org/phonetic.html
- http://www.anglistik.uni-bonn.de/samgram/phonprac.htm
- http://www.mnsu.edu/comdis/phonetics/phonetics.html
- http://www.englishexercises.org/makeagame/viewgame.asp?id=4767
- http://www.tedpower.co.uk/phonetics.htm
- http://www.bl.uk/learning/langlit/sounds/changing-voices/
- http://www.mta.ca/faculty/arts-letters/mll/linguistics/exercises/index.html#phono
- http://cla.calpoly.edu/~jrubba/phon/weeklypractice.html
Articulatory description of consonant sounds

• State of glottis (voiced or voiceless)
• Place of articulation (bilabial, alveolar, etc.)
• Manner of articulation (stop, fricative, etc.)
Bilabial

[p] pit
[b] bit
[m] mit
[w] wit
Labiodental

[f] fan
[v] van
Interdental

“th”

[θ] thigh

[ð] thy
Alveolar

[t] tip
[d] dip
[s] sip
[z] zip
[n] nip
[l] lip
[r] rip
Alveopalatal

[tʃ] chin
[dʒ] gin
[ʃ] shin
[ʒ] azure
Palatal

[j] yes
Velar

[k] call
[g] guy
[ŋ] sing
[h] hit
[?] uh-oh

Glottal
Place of Articulation

- **bilabial**  \([p, b, m, w]\)
- **labiodental**  \([f, v]\)
- **interdental**  \([\theta,  \delta]\)
- **alveolar**  \([t, d, s, z, n, l, r]\)
- **alveopalatal**  \([ʃ, ʒ, tʃ, dʒ]\)
- **palatal**  \([j]\)
- **velar**  \([k, g, η]\)
- **glottal**  \([h, ?]\)

uvular and pharyngeal (non-English)
What is the place of articulation of the following consonants?

[b]  bilabial
[s]  alveolar
[ŋ]  velar
[j]  palatal
[θ]  interdental
Articulatory description of consonant sounds

- State of glottis (*voiced* or *voiceless*)
- Place of articulation (*bilabial*, *alveolar*, etc.)
- Manner of articulation (*stop*, *fricative*, etc.)
Manner of Articulation

**stop**
the airflow is momentarily blocked off
- \( [p, b, t, d, k, g, \emptyset] \)

**fricative**
a narrow constriction of air at the place of articulation.
The air passing through makes a hissing noise.
- \( [f, v, \theta, \delta, s, z, \mathring{z}, ʒ, h] \)

**affricate**
rapid sequence of a stop and a fricative, made at roughly the same place of articulation.
- \( [tʃ, dʒ] \)

**nasal**
the velum is lowered, allowing air to escape through the nose.
- \( [m, n, ŋ] \)
Manner of Articulation

**Glide**

air stream is only partly constricted (halfway between a vowel and a consonant)
- \([w, j]\)

**Liquid**: \(l\) and \(r\) sounds
- **lateral** \([l]\): sound made with the sides of the tongue lowered
- **approximant** \([ɹ]\)
- **flap** \([ɾ]\): sound produced when the tongue strikes the alveolar ridge as it passes across it
# Manner of Articulation

<table>
<thead>
<tr>
<th>Manner</th>
<th>Symbols</th>
</tr>
</thead>
<tbody>
<tr>
<td>stop</td>
<td><code>[p, b, t, d, k, g, ?]</code></td>
</tr>
<tr>
<td>fricative</td>
<td><code>[f, v, θ, ð, s, z, ʃ, ʒ, h]</code></td>
</tr>
<tr>
<td>affricate</td>
<td><code>[tʃ, dʒ]</code></td>
</tr>
<tr>
<td>nasal</td>
<td><code>[m, n, ŋ]</code></td>
</tr>
<tr>
<td>lateral</td>
<td><code>[l]</code></td>
</tr>
<tr>
<td>approximant</td>
<td><code>[ɹ]</code></td>
</tr>
<tr>
<td>flap</td>
<td><code>[ɾ]</code></td>
</tr>
<tr>
<td>glide</td>
<td><code>[w, j]</code></td>
</tr>
</tbody>
</table>
Articulatory description of consonants

<table>
<thead>
<tr>
<th>Manner of articulation</th>
<th>Place of articulation</th>
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<tbody>
<tr>
<td>Stop</td>
<td>Labial</td>
</tr>
<tr>
<td>voiced</td>
<td>p</td>
</tr>
<tr>
<td>voiced</td>
<td>b</td>
</tr>
<tr>
<td>Fricative</td>
<td>voiced</td>
</tr>
<tr>
<td>voiced</td>
<td>f</td>
</tr>
<tr>
<td>voiced</td>
<td>f</td>
</tr>
<tr>
<td>Affricate</td>
<td>voiced</td>
</tr>
<tr>
<td>voiced</td>
<td>v</td>
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<tr>
<td>voiced</td>
<td>d</td>
</tr>
<tr>
<td>Nasal</td>
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</tr>
<tr>
<td>voiced</td>
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<td>m</td>
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<tr>
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<td>Glide</td>
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<tr>
<td>voiced</td>
<td>w</td>
</tr>
<tr>
<td>approximant</td>
<td></td>
</tr>
<tr>
<td>voiced alveolar lateral</td>
<td>w</td>
</tr>
</tbody>
</table>

- [b] voiced bilabial stop
- [s] voiceless alveolar fricative
- [ŋ] voiced velar nasal
- [j] voiced palatal glide
- [l] voiced alveolar lateral
Articulatory description of vowel sounds

- Height of tongue in mouth (*high*, *mid*, *low*)
- Frontness/backness of raised part of tongue (*front*, *central*, *back*)
- Position of lips (*rounded*, *unrounded*)
- Tense (*tense*, *lax*)
English Vowels - monothongs

(1) The vowels (monophthongs) of English.
high
front
unrounded
tense

beat [bit]
see [si]
high
front
unrounded
lax

[ɪ]

bit [bɪt]
sit [sɪt]
mid
front
unrounded
tense

[bait] [beɪt]
[fate] [feɪt]
great [ɡreɪt]
mid
front
unrounded
lax

[ε]

bet [bɛt]
bread [brɛd]
low front unrounded lax

bat [bæt]
high
back
rounded
tense

boot [but]
group [gɹup]
flute [flut]
high back rounded lax

put [put]
good [gud]
mid
back
rounded
tense

[ ]
[ ]

boat [bou]
wrote [rou]
though [ðou]
Though most of us West Coasters say [bat] (the same sound as in “Bott” or “pot”).
low back unrounded tense

[ɑ]
cot [kat]
mid
central
unrounded
lax

but [bʌt]
rough [rʌf]
above [əʌv]
Classification of Vowels

[i]  high front unrounded tense
[u]  high back rounded tense
[a]  low back unrounded tense
[ə] or [ʌ]  mid central unrounded lax
English Vowels

boy [bɔɪ]
lies [laɪz]
loud [laʊd]

(2) Two-part articulations of the diphthongs of English (the arrows indicate the transitions)
Table 2.12  English consonants: places and manners of articulation

<table>
<thead>
<tr>
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<tr>
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<td></td>
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</table>

approximant

Bingo!

(1) The vowels (monophthongs) of English.