



### PHONEME FUNDAMENTALS

Phonemes are the little building blocks of sound that make up spoken language. It's not the letters of the words, but the individual sounds that make up audible words. Linguists create complex charts and have phonetic alphabets to "write" phonetically rather than alphabetically.

#### The Phonemic Chart

i:	I	U	u:	ɪə	eɪ		
green	pink	wood	blue	clear	grey		
ɛ	ə	ɜ:	ɔ:	ʊə	ɔɪ	oʊ	
red	silver	purple	fawn	pure white	turquoise	yellow	
æ	ʌ	ɑ:	ɒ	ɛə	aɪ	aʊ	
black	rust	khaki	orange	fair	sky blue	brown	
p	b	t	d	tʃ	dʒ	k	g
Poland	Burma	Thailand	Denmark	China	Germany	Korea	Greenland
f	v	θ	ð	s	z	ʃ	ʒ
France	Vietnam	South Africa	The Philippines	Singapore	Zambia	Russia	Malaysia
m	n	ŋ	h	l	r	w	j
Mexico	Norway	Hong Kong	Hungary	Laos	Romania	Wales	Yugoslavia

D  
I  
P  
H  
T  
H  
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G  
S

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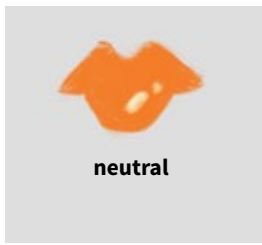


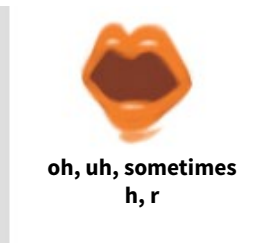



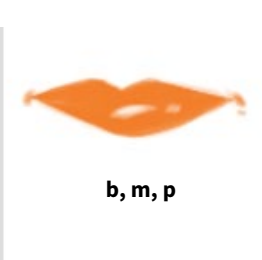


### MOUTH THE WORDS

Animators don't have to be quite so scientific and can simplify this quite a bit depending on the style of the character design and animation. It starts by breaking down the Phonemes into some larger more general categories, and then "reading" the audio track by writing out phonetically what is being said on the corresponding frames on a paper or digital exposure sheet or with markers on a layer in Ae. To write out a sentence "phonetically"...

**Queens never make bargains.  
becomes...**

**k - oo - ee - n - s - n - eh - v - r - m - ay - k - b - ah - r - g - i - n - s**

The animator creates different mouth shapes - or rigs in the means to form different mouth shapes - that correspond to those phonemes. Here is an example of a simple phoneme chart for Dolly's character. This is using a simple system of replacement mouths over the head layer, a technique that was born as part of the "limited" animation style developed in the 50's and works great for our digital "puppet" characters...

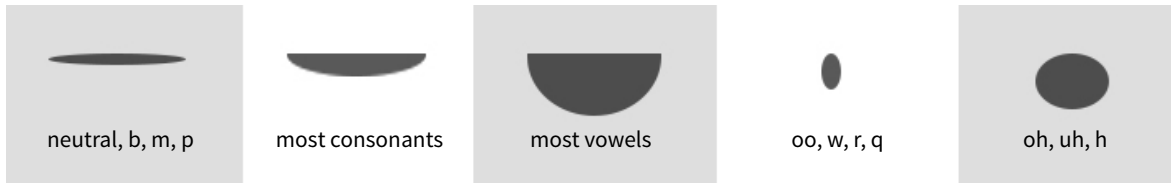
 <b>neutral</b>	 <b>ay, ah</b>	 <b>ee, eh, aye, ɪ</b>	 <b>oh, uh, sometimes h, r</b>	 <b>oo, w, sometimes q, r</b>
 <b>r, sometimes q</b>	 <b>c, d, g, j, k, n, s, t, x, z</b>	 <b>b, m, p</b>	 <b>l, th</b>	 <b>f, v</b>



# CHARACTER ANIMATION BOOTCAMP

## LIP SYNC LORE

This kind of system can be modified and adapted for any style and can be as simple as something like this...



Keep in mind that with a more complex performance you may need to make multiple sets of mouths, sad, happy, neutral, shouting, whispering, etc. Or you need to rig in the ability to make more complex mouth shapes. It's all about analyzing what you need / can do for style, budget, schedule, etc.

With more "full" or frame-by-frame animation, a chart with suggested poses for the mouth shapes created by the character designer, director, or animator is used by the animator to "improvise" the sync through the drawings. This can be done either straight ahead, pose-to-pose, or using the optimal pose-to-pose-base-with-straight-ahead-finessing style.

