



Cued Articulation Course

Notes

Introduction

Cued Articulation

Cued Articulation is a set of hand cues for teaching the individual sounds in a word.

The hand movements are logical - each hand movement represents one sound and, because the cue demonstrates where and how the sound is made, the cue gives clues as to how the sound is produced.

Cued Articulation is not a sign language where the whole word is signed – however, Cued Articulation can be used alongside sign languages.

Cued Articulation is a system where individual sounds, being targeted in the classroom or Speech Pathology clinic, can be made explicit – we don't cue all the sounds in all the words all the time!

The system also includes Colour Coding of the letters which represent these sounds.

Development

Jane Passy devised the cues during her Speech Pathology career.

Teachers found that their use of Cued Articulation in the classroom developed the sound awareness skills of all their students, and themselves.

Cued Articulation used with success:

-) as part of a general classroom literacy program.
-) with students with speech, language and communication needs.

Phonological Awareness

Involves conscious awareness that spoken words are composed of units of sound, and that they can be analysed, manipulated, and substituted.

-) a reliable predictor of later reading ability. '...a child's phonological awareness has been described as the best single predictor of reading performance' (Gillon, 2004).
-) Early language experiences play an important role in the development of early PA: '...many children develop phonological ...skills simply from being exposed to relevant literary activities, such as hearing nursery rhymes' (McCutcheon et al, 2002).
-) Improved PA usually results in improved reading ability: '...early, systematic instruction in phonological awareness and phonics provided in the general education classroom improves children's early reading skills' (Bos, 2001).

Phonological awareness progresses from large units to small (Cupples, 2001; Gillon, 2004; Melby-Lervåg, Lyster, & Hulme, 2012).

-) word awareness
-) syllable awareness
-) onset (initial sound/sounds) – rime (the vowel and the rest of the syllable)
-) individual sounds

Cued Articulation can assist students to identify and discriminate sounds – the visual cue provides extra feedback by making the initial sound, or onset, more explicit.

Cued Articulation and literacy programs

Cued Articulation: a tool alongside any literacy program which has a phonic base.

Outcomes of the course:

you will:

1. Understand how speech sounds are produced and the systems involved in using sounds in English
2. Understand how the sound system fits in with the acquisition of speech sounds in normal speech development
3. Use the 26 consonant cues
4. Use the colour coding of the consonant sounds – useful for ESL and HI
5. Understand the complexity of the vowels of English and use their vowels cues
6. Relate sounds, for which you have learned Cues, to their written representation
7. Apply Cued Articulation and colour coding in the classroom
8. Understand how Aboriginal languages' sound system compares with Standard Australian English
9. Use Cued Articulation to help Aboriginal students recognise and produce Australian English (SAE) sounds.

Aim:

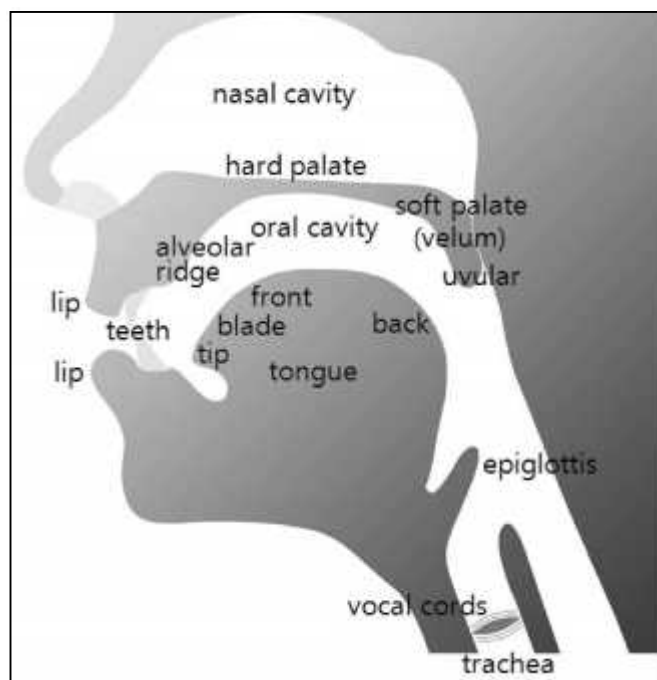
The aim of this training is to improve our students' literacy learning by improving their phonological awareness. This is achieved by deepening teachers' understanding of our English sounds and sound system to enable them to provide focused, sequenced phonological awareness training.

Cued Articulation training

1. provides this understanding for teachers
2. provides a tool to take this new understanding to the classroom

The Sound System

The Sound Makers - the articulators.



Features of Sounds

Cued Articulation reflects the three features of sounds.

- 1) Manner of articulation.
 -) stops or plosives: made by stopping the air flow. Cues have short jerky movements.
 -) nasals: air is directed through the nose. Cues are placed on the nose.
 -) fricatives: made by impeding the air as it travels through the oral cavity. Cues have a long slow movement to indicate the steady flow of air.
- 2) Place of articulation.
 -) Sounds articulated at the lips (eg 'p'): the cue is placed by the lips. Sounds at the back of the mouth (eg 'k'): hand placed the by the throat. So the placement of the hand while making the cue reflects the place of articulation.
- 3) Voicing.
 -) Is the consonant voiced or unvoiced? The vocal cords are not vibrated for every sound. Cues for unvoiced sounds: one finger (and sometimes the thumb); cues for voiced sounds: two fingers.

So, Cued Articulation reflects the three features of sounds:

the cue for p:

-) manner: a short movement
-) place: cue placed at the lips
-) voicing: cue has one finger

(see pp. 2-4, Passy (2010) *Cued Articulation Consonants and Vowels*).

Articulatory Awareness

Research has shown that the awareness of the articulatory movements to make speech sounds makes it easier for children to make graphophonemic connections – i.e. letter sound links – to identify written words and secure them in memory (Boyer & Ehri, 2011; Castiglioni-Spalte & Ehri, 2003).

The Sound chart

WHERE HOW	both lips <i>bilabial</i>	lips and teeth <i>labio-dental</i>	teeth <i>dental</i>	upper tooth ridge <i>alveolar</i>	<i>palato-alveolar</i>	<i>retroflex</i>	hard palate <i>palatal</i>	soft palate <i>velar</i>	glottis (throat) <i>glottal</i>
stops:	<u>p</u> <u>b</u>			<u>t</u> <u>d</u>				<u>k</u> <u>g</u>	
nasals:	<u>m</u>			<u>n</u>				<u>ŋ</u>	
fricatives:	<u>w</u> <u>h</u>	<u>f</u> <u>v</u>	<u>θ</u> <u>ð</u>	<u>s</u> <u>z</u>	<u>ʃ</u> <u>ʒ</u>		<u>ç</u>		<u>h</u>
affricates:					<u>tʃ</u> <u>dʒ</u>				
liquids:				<u>l</u>		<u>r</u>			
glides:	<u>W</u>						<u>y</u>		

This is a simplified IPA (International Phonetic Alphabet) chart, here representing the generally accepted sounds of standard English see p. 7 Passy (2010), *Cued Articulation Consonants and Vowels*.

Colour Coding

Note the colour coding of all the consonants on this chart. The colour in which the written letters are underlined represents the SOUND those letters make regardless of how the word is spelt.

See p. 4, (Passy 2010) *Cued Articulation Consonants and Vowels*.

Colour Coding

lip sounds:	lipstick colours
	
tongue sounds:	blue tongue lizard
	
s,z:	snake in the green grass
	
back sounds:	muddy brown
	
nasal sounds:	voicing line black
	
others:	

44 Phonemes

There are 44 sounds, or phonemes, in English.

They consist of 24 consonants and 20 vowels. For the 44 sounds, there are only 26 letters in the alphabet to represent the sounds. We spell many sounds with more than one letter:

-) Phonemes spelt with one letter: 'graph' 'a' (cat)
-) Phonemes spelt with two letters: 'digraph' 'sh' (ship)
-) Phonemes spelt with three letters: 'trigraph' 'tch' (watch)
-) Phonemes spelt with four letters: 'quadrgraph' 'ough' (through)

No matter how many letters spell those sounds we just use one cue. We cue SOUNDS, not letters.

Consonants – Stops & Nasals

WHERE	both lips	lips and teeth	teeth	upper tooth ridge	palato-alveolar		hard palate	soft palate	glottis (throat)
HOW	bilabial	labio-dental	dental	alveolar		retroflex	palatal	velar	glottal
stops:	<u>p</u> <u>b</u>			<u>t</u> <u>d</u>				<u>k</u> <u>g</u>	
nasals:	<u>m</u>			<u>n</u>				<u>ŋ</u>	
fricatives:	<u>w</u> <u>h</u>	<u>f</u> <u>v</u>	<u>θ</u> <u>ð</u>	<u>s</u> <u>z</u>	<u>ʃ</u> <u>ʒ</u>		<u>ç</u>		<u>h</u>
affricates:					<u>tʃ</u> <u>dʒ</u>				
liquids:				<u>l</u>		<u>r</u>			
glides:	<u>w</u>						<u>y</u>		

Stops

Stops are made by blocking then releasing the air.

‘p’ Unvoiced bilabial stop

See p. 10, Passy, (2010), *Cued Articulation Consonants and Vowels*.

Spelling choices: p (pear), pp (apple).

‘b’ Voiced bilabial Stop

See p. 11 *Cued Articulation Consonants and Vowels*.

Spelling choices: b (big), bb (ribbon).

‘t’ Unvoiced alveolar stop

See p. 12 *Cued Articulation Consonants and Vowels*.

Spelling choices: t (tap), tt (butter), ed (kissed), cht (yacht).

‘d’ Voiced alveolar stop

See p. 13 *Cued Articulation Consonants and Vowels*.

Spelling choices: d (door), dd (teddy), ed (called).

‘k’ Unvoiced velar stop

See p. 14 *Cued Articulation Consonants and Vowels*.

Spelling choices: k (key), c (car), ck (back), q (quiz), first part of x (fox).

‘g’ Voiced velar stop

See p. 15 *Cued Articulation Consonants and Vowels*.

Spelling choices: g (girl), gg (bigger).

Nasals

The air is directed through the nose by lowering the soft palate. The voice is used for all nasals.

‘m’ Bilabial nasal

See p. 16 *Cued Articulation Consonants and Vowels*.

Spelling choices: m (moon), mm (dimmer), mb (comb), mn (column).

‘n’ Alveolar nasal

See p. 17 *Cued Articulation Consonants and Vowels*.

Spelling choices: n (name), nn (tennis), gn (gnome), kn (know), pn (pneumatic).

‘ng’ Velar nasal

See p. 18 *Cued Articulation Consonants and Vowels*.

Spelling choices: ng (long), n (finger).

Common cueing errors

These are some common errors made when cueing.









-) It is important that we do not add an ‘uh’ sound after an unvoiced consonant – we don’t say ‘tuh’ we say ‘t’.
-) It is important to make the cue close to the action, so you draw children’s attention to the place of articulation.
-) Don’t make the cue in front of the mouth, as this would block the view of what’s happening.
-) Only make the cue as the particular sound is articulated.


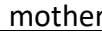






Colour Coding Worksheet 1

<p>/p/ /b/ /m/</p>	<p>/t/ /d/ /n/</p>	<p>/k/ /g/ / / (ng)</p>
<p>pip pump plum plumber baby maybe bomb bombardment mummy puppy photo pneumatic</p>	<p>tin din did tapped rubbed missed watched heard end daddy dented gnome</p>	<p>kick girl gym singing kinky knee tangle chemist queen bridge laugh</p>

Underline the letters that spell the sounds in the words with colours as shown at the head of the table columns.

Sounds/Syllables Catch-Up

	Syllables	Sounds
		
		
		
		
		
		
		
		

	Syllables	Sounds
 laughed		
 mother		
		
		
		
		
		
 washing		

Consonants – Fricatives & Affricates

WHERE HOW	both lips <i>bilabial</i>	lips and teeth <i>labio-dental</i>	teeth <i>dental</i>	upper tooth ridge <i>alveolar</i>	<i>palato-alveolar</i>	<i>retroflex</i>	hard palate <i>palatal</i>	soft palate <i>velar</i>	glottis (throat) <i>glottal</i>
stops:	<u>p</u> <u>b</u>			<u>t</u> <u>d</u>				<u>k</u> <u>g</u>	
nasals:	<u>m</u>			<u>n</u>				<u>ŋ</u>	
fricatives:	<u>w</u> <u>h</u>	<u>f</u> <u>v</u>	<u>θ</u> <u>ð</u>	<u>s</u> <u>z</u>	<u>ʃ</u> <u>ʒ</u>		<u>ç</u>		<u>h</u>
affricates:					<u>tʃ</u> <u>dʒ</u>				
liquids:				<u>l</u>		<u>r</u>			
glides:	<u>w</u>						<u>y</u>		

Fricatives

Fricatives are made by forcing air through a narrow channel made by placing two articulators close together.

‘f’ Unvoiced labiodental fricative

See p. 20 Passy, (2010) *Cued Articulation Consonants and Vowels*.
Spelling choices: f (for), ff (off), ph (phone), gh (cough).

‘v’ Voiced labiodental fricative

See p. 21 *Cued Articulation Consonants and Vowels*.
Spelling choices: v (van), f (of).

‘s’ Unvoiced alveolar fricative

See p. 22 *Cued Articulation Consonants and Vowels*.
Spelling choices: s (seat), ss (grass) c (city), sc (scene), se (course), second half of x (box).

‘z’ Voiced alveolar fricative

See p. 23 *Cued Articulation Consonants and Vowels*.
Spelling choices: z (zoo), zz (buzz), s (digs), ss (scissors), x (xylophone).

‘sh’ Unvoiced palato-alveolar fricative

See p. 24 *Cued Articulation Consonants and Vowels*.
Spelling choices: sh (shop), s (sugar), ti (friction), ci (precious), sci (luscious), ssi (passion), ch (chalet), c (ocean).

‘ʒ’ Voiced palato-alveolar fricative

See p. 25 *Cued Articulation Consonants and Vowels*.
Spelling choices: si (vision), z (seizure), ge (beige).

Affricates

‘ch’ Unvoiced palato-alveolar affricate

See p. 28 *Cued Articulation Consonants and Vowels*.

Spelling choices: ch (chew), tch (match).

‘j’ Voiced palato-alveolar affricate

See p. 29 *Cued Articulation Consonants and Vowels*.

Spelling choices: j (jeep), g (giraffe), ge (orange), dge (fudge).

Fricatives continued

‘th’ Unvoiced dental fricative

See p. 26 *Cued Articulation Consonants and Vowels*.

Spelling choices: th (think).

‘th’ Voiced dental fricative

See p. 27 *Cued Articulation Consonants and Vowels*.

Spelling choices: th (there).

‘h’ Glottal fricative

See p. 19 *Cued Articulation Consonants and Vowels*.

Spelling choices: h (house).

‘wh’ Bilabial fricative

See p. 36, *Cued Articulation Consonants and Vowels*.

Spelling choices: wh (where).

Australian speakers say ‘w’ instead of this sound, so you don’t need to learn the cue.

Be aware that people with other dialects of English may use this sound.

/ç/ Palatal fricative

See p. 36, *Cued Articulation Consonants and Vowels* (Passy, 2010).

Spelling choices: h (human). You will not need to use this cue, but just be aware of the presence of this sound, and avoid using examples starting with this sound, when you are teaching the ‘h’ sound.

Morphological Endings

“s” ending

(Words ending in unvoiced consonants - p, t, k, f, th)

“z” ending

(Words ending in voiced consonants - b, d, g, v, th, m, n, l, or a vowel)

“ez” ending

(Words ending in s, z, sh, ch, or j)

1. Plural

crops

hats

books

cuffs

troughs

moths

crabs

birds

frogs

waves

videos

hens

wheels

bananas

videos

buses

noses

bushes

witches

pages

2. Present Tense

jumps

sits

kicks

laughs

rubs

wades

wags

dives

breathes

irons

crawls

draws

misses

hisses

buzzes

fishes

finishes

touches

judges

3. Possessive

Pip's

the boat's

Luke's

the roof's

Bob's

Arnhem Land's

the dog's

Love's

my mum's

that man's

Australia's

the boss's

James'

Trish's

Patch's

Madge's

Colour Code the morphological ending in these words: use a light green marker.

Past Tense Verbs

Although the written ending to indicate past tense in regular verbs is always “ed”, the way this ending is pronounced is determined by the consonant (or vowel) sound preceding the “ed” ending.

“t” ending

(Verbs ending in unvoiced consonants)

popped
kicked
kissed
laughed
watched

“d” ending

(Verbs ending in voiced consonants or a vowel)

rubbed
hugged
buzzed
waved
judged
climbed
ironed
banged
called
roared

“ed” ending

(Verbs ending in t or d)

shouted
landed

Colour Code the morphological ending in the words above: use a light blue marker.

Colour Coding Worksheet 2

<p><u>/f/</u> <u>/v/</u></p>	<p><u>/s/</u> <u>/z/</u></p>	<p><u>/ʃ/</u>/(sh) <u>/ /</u></p>
<p>five photo of off cough Philip through trough live life</p>	<p>sees cease use (noun) use (verb) face city vision xylophone box sixty</p>	<p>shoe sure passion sugar seizure treasure vision friction beige charade</p>

Underline the letters that spell the sounds in the words with colours as shown at the head of the table columns.

Colour Coding Worksheet 3

<u>/tʃ/(ch)</u> / <u>/j/</u>	<u>/θ/(th)</u> / <u>/ð/(th)</u>	<u>/h/</u>
chicken choir watch judge giraffe jam George gymnasium orchard orchid	thin fourth bath bathe bathers breath breathe these nothing without	how who thin hair bough shine what church photograph huge

Underline the letters that spell the sounds in the words with colours as shown at the head of the table columns.

Consonants – Liquids & Glides

WHERE	both lips	lips and teeth	teeth	upper tooth ridge	palato-alveolar		hard palate	soft palate	glottis (throat)
HOW	bilabial	labio-dental	dental	alveolar		retroflex	palatal	velar	glottal
stops:	<u>p</u> <u>b</u>			<u>t</u> <u>d</u>				<u>k</u> <u>g</u>	
nasals:	<u>m</u>			<u>n</u>				<u>ŋ</u>	
fricatives:	<u>w</u> <u>h</u>	<u>f</u> <u>v</u>	<u>θ</u> <u>ð</u>	<u>s</u> <u>z</u>	<u>ʃ</u> <u>ʒ</u>		<u>ç</u>		<u>h</u>
affricates:					<u>tʃ</u> <u>dʒ</u>				
liquids:				<u>l</u>		<u>r</u>			
glides:	<u>w</u>						<u>y</u>		

Liquids

Liquids are made by some narrowing of the vocal tract, but no stopping or real impedance of the airflow. All liquids are voiced.

'l' Alveolar liquid

See p. 30, *Cued Articulation Consonants and Vowels*.

Spelling choices: l (look), ll (yellow).

Blends / Digraphs

Blend: two, or three, letters spelling two, or three, sounds (requiring two, or three, cues)

Digraph: two letters spelling one sound (one cue).

Note that the colour coding will show just how many sounds must be said, and cued:

In **blends**, each letter spells its own sound:

p-l-ay, where P and L each spell a sound, so we'll need to cue a 'p' and an 'l'

s-t-o-p, where S and T each spell a sound

s-p-l-a-t, where S, P and L each spell a sound

p-r-a-m, where P and R spell a sound

f-i-n-g-er, where N spells 'ng' and G spells 'g' - each letter spelling its own sound

b-e-s-t, where S and T spell a sound

In **digraphs**, two letters spell only one sound:

sh-o-p, where S and H spell the single sound 'sh'

ch-i-ck, where C and H spell the single sound 'ch' and C and K spell the single sound 'k' at the end of the word.

th-a-t, where T and H spell the single sound 'th'

s-i-ng, where N and G spell the single sound 'ng'

c-o-mb, where M and B spell the single sound 'm'

‘r’ Retroflex liquid

See p. 31, *Cued Articulation Consonants and Vowels*.
Spelling choices: r (run), rr (hurry), wr (wrong).

Glides

Glides are made by gliding from one vowel position to another.

‘w’ Bilabial glide

See p. 32, *Cued Articulation Consonants and Vowels*.
Spelling choices: w (watch), wh (whale), u (quiz), first half of o (one).
Some English speakers say /ʍ/ for wh spellings.
w-r activity

‘y’ Palatal glide

See p. 33, *Cued Articulation Consonants and Vowels*.
Spelling choices: y (yacht), first half of u (unicorn)

Colour Coding Worksheet 4

<u>l</u> / <u>r</u>	w / j(y)
rat	witch
label	your
liberally	pay
hurry	by
wrong	busy
flower	yellow
lovely	cow
walk	what
rolled	queen
bird	one
very	utility
car	few

Underline the letters that spell the sounds in the words with colours as shown at the head of the table columns.

Normal Sound Acquisition

Although there are differences in individual speech sound acquisition, we can make a broad generalisation about the sequence in which speech sounds are acquired in English. Sounds which are likely to be acquired early are;

m, n, y, b, w, d, p, h

and then:

t, ng, k, g, f, v, ch, j

The sounds likely to appear later are:

sh, voiced sh, l, r, s, z, th, voiced th

(Shriberg, 1993)

There are no fricatives in this first group, except for 'h': the sounds here are made up of stops, nasals and glides. Some fricatives appear in the second group of sounds, and the later-appearing fricatives, and the liquids, in the last group of sounds.

The sound substitutions demonstrated by children as their sound system develops can be described in terms of phonological processes - these processes determine the substitutions he uses.

Using Cued Articulation to Reinforce Phonological Therapy

The following processes occur normally in early speech development. Children may require some intervention if these phonological processes persist beyond the age at which they should have been resolved, and more mature processes have not developed. Remember that immature phonology may be a sign of more global speech or language problems. Refer to the Speech Pathologist for an analysis of the child's phonology so that any deviant processes or other language problems can be investigated.

-) stopping of fricatives: eg f → b, far → 'bar'
 - ☞ Show the difference between the long /f/ cue and the short /b/ cue.
-) deletion of final consonants: eg mop → 'mo', bus → 'bu'
 - ☞ cue the final consonant
-) gliding of liquids r → w, l → y
-) fronting of velars: k → t, g → d
 - ☞ Show the difference between the front cue for /t/, /d/ and the back cue for /k/, /g/.
-) reduction of blends (clusters) eg stack → 'tack', spoon → 'poon'
 - ☞ Cueing each consonant of a blend helps the child 'see' what sounds have to be articulated, and spelt.
-) voicing of unvoiced stops: p → b, t → d
 - ☞ Show the difference between the cues for the quiet and noisy sound (ie unvoiced and voiced).

Learning a Second Language

Both the English speaker learning a second language and a foreign speaker learning English as a second language will experience three main difficulties:

-) Substitution for sounds not present in their first language with the closest equivalent from their first language.
-) Discrimination – difficulty hearing, detecting and distinguishing between sounds in the new language.
-) Pronunciation – difficulty pronouncing the new sounds because of the unfamiliar tongue and mouth position required in the new language.

Cued Articulation can assist the new language learner ‘see’ the sounds of the new language and therefore help them hear and make the new sounds.

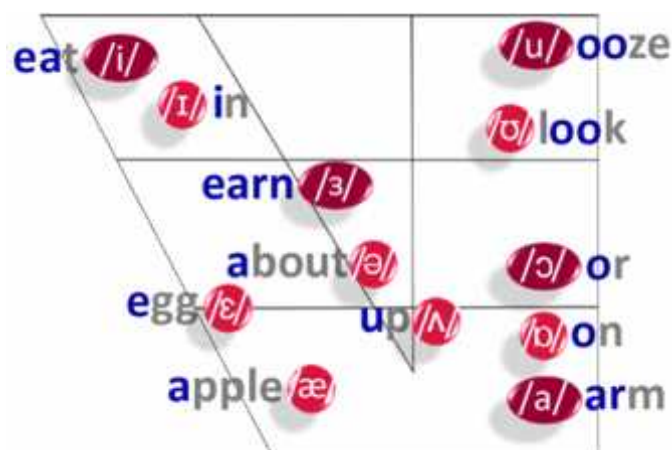
The Vowel System

Vowel sounds are produced when air flows freely through the mouth.

Different vowel sounds are made by changes mainly in the tongue position - the lips move during vowel production, but they serve only to refine the quality of the vowel produced.

See p. 37, Passy (2010), *Cued Articulation Consonants and Vowels*.

12 Pure vowels



Vowel Cues

Unlike consonants, it is not possible to describe in words the fine differences in tongue position required for vowel production. Cued Articulation cues provide a visual clue about how to make vowel sounds.

Long/short

-) long vowels: long movement,
-) short vowels: short quick movement.

Front/back/central

-) front vowels: forward movement, with a spread hand shape to reflect the spread lips of these vowels,
-) back vowels: backward movement with a round hand shape to reflect the round lips of these vowels and
-) central vowels: sideways movement.

Pure/diphthongs

-) pure vowels: single hand shape and movement,
-) diphthongs: cues reflect the changing tongue and lip positions of these vowels, showing the two positions required for these vowels.

The vowel space chart shows the 12 pure vowels of English which are made up of:

-) four front vowels - /i/, /ɪ/, /e/, /æ/. For these sounds the body of the tongue rises towards the front of the mouth.
-) five back vowels - /u/, /ʊ/, /ɔ/, /ɒ/, /ɑ/. For these sounds the tongue rises towards the back of the mouth.

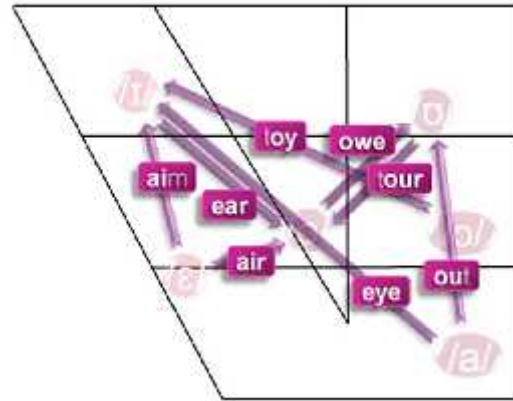
-) and three central vowels: /ɜ/, /ə/, /ʌ/. For these sounds the tongue lies centrally in the mouth.

The pure vowels can also be categorised as short and long vowels.

-) The seven short vowels are indicated by the light red circles.
-) The five long vowels are indicated by the dark red ovals.

8 Diphthongs

Diphthongs are made by gliding from one vowel position to another. Note here how the tongue moves from one position to another in order to articulate the complete diphthong: /ay/, /oh/, /ie/, /ow/, /oy/, /ear/, /air/, /ure/.



Triphthongs

As well as diphthongs, there are triphthongs, which are made by gliding through three vowel sounds, such as 'our' and 'ire'.

Vowel phonemes

For the 20 vowel phonemes we have only 5 vowel letters - AEIOU. So many vowel phonemes are spelt with more than one letter:

-) vowel phonemes are spelt with one letter - the short vowel sounds are often spelt with one letter. Also, e.g. when Y spells 'ee' or 'ie', as in 'happy' and 'sky'
-) vowel phonemes spelt with two letters are vowel digraphs, e.g. ee, ar, or, al, aw (note these three different spellings for the same sound), ay, oy, oo
-) vowel phonemes spelt with three letters are vowel 'trigraphs', such as, igh, oar, ear
-) vowel 'quadrgraphs' - vowels spelt with four letters, e.g. OUGH spelling 'oo' 'oh', 'ow', and so on.

Vowel Circle

The pure vowels can be plotted on a semi-circle which can be seen to reflect tongue position. As the tongue position lowers for the low front vowels, they can be plotted coming down the semi-circle. Then the central, or mid-position vowels. Then, the back vowels start low on the semi-circle and move higher as the tongue moves higher in the back of the mouth. As we say the vowels in this sequence, our lip position moves from a spread position for the /i/ vowel, through a more neutral position for the central vowel, to a round shape for the back vowels – front vowels are associated with a spread lip position, and back vowels with a round lip position.



12 Pure Vowels

Front Vowels – lips spread

1. 'ee' /i/ she, eat
2. 'i' /ɪ/ hit, busy
3. 'e' / / head, said
4. 'a' /æ/ plait, pack

Back Vowels – lips rounded

5. 'ar' /ɑ/ arm, grass
6. 'o' /ɒ/ cough, want
7. 'or' /ɔ/ or, bought
8. 'ɔ' /ɔ/ put, wood
9. 'oo' /u/ moon, shoe

Central Vowels – lips neutral

10. 'u' /ʌ/ up, rough
11. 'er' /ɜ/ hurt, bird
12. 'ə' /ə/ the, cricket

8 Diphthongs

13. 'ay' /ɪ/ aim, day
14. 'oh' /əʊ/ oat, go
15. 'igh' /aɪ/ by, high
16. 'ow' /aʊ/ out, now
17. 'oy' /ɔɪ/ oil, boy
18. 'ear' /ɪə/ ear, deer
19. 'air' / ə/ pear, there
20. 'ure' /ʊə/ cure, doer

Pure Vowels

Short Vowels

- /æ/ (apple)** See p. 50, Passy (2010), *Cued Articulation Consonants and Vowels*.
Spelling choices: a (apple), ai (plait).
- /ɛ/ (egg)** See p. 48, *Cued Articulation Consonants and Vowels*.
Spelling choices: e (egg), a (many), u (bury), ea (head), eo (leopard), ai (said), ie (friend), ue (guess).
- /ɪ/ (in)** See p. 46, *Cued Articulation Consonants and Vowels*.
Spelling choices: i (in), u (busy), y (gym), o (women), ie (sieve), ui (biscuit).
- /ɒ/ (on)** See p. 54, *Cued Articulation Consonants and Vowels*.
Spelling choices: o (box), a (want), ou (cough) au (auction).
- /ʌ/ (up)** See p. 62, *Cued Articulation Consonants and Vowels*.
Spelling choices: u (up), o (monkey), oo (blood), oe (does), ou (rough).
- /ʊ/ (good)** See p. 58, *Cued Articulation Consonants and Vowels*.
Spelling choices: u (bush), o (woman), oo (good), oul (would).
- /ə/ (about)** See p. 66, *Cued Articulation Consonants and Vowels*.
Spelling choices: many vowel spellings in unstressed syllables, such as ‘about’ and ‘computer’.

Long Vowels

- /ɑ/ (arm)** See p. 52, *Cued Articulation Consonants and Vowels*.
Spelling choices: a (grass), ar (arm), al (calm), au (aunt), er (clerk), aar (bazaar), ear (heart), are (are), uar (guard).
- /ɔ/ (or)** See p. 56, *Cued Articulation Consonants and Vowels*.
Spelling choices: a (fall), or (or), oa (broad), ar (warm), al (walk), aw (law), au (sauce), ore (core), oor (floor), oar (oar), our (four), awe (awe), augh (taught), ough (bought).
- /ɜ/ (earn)** See p. 64, *Cued Articulation Consonants and Vowels*.
Spelling choices: er (germ), ir (bird), or (word), ur (hurt), ear (earn), ere (were), our (journey).
- /i/ (eat)** See p. 44, *Cued Articulation Consonants and Vowels*.
Spelling choices: e (she), y (jelly), ea (eat), ee (free), ei (receive), ey (key), eo (people), ie (chief), uay (quay), e e (eve), i e (police).
- /u/ (ooze)** See p. 60, *Cued Articulation Consonants and Vowels*.
Spelling choices: o (who), u (truth), oo (ooze), oe (shoe), ou (you), wo (two), ew (grew), ue (blue), ui (fruit), ough (through), u e (prune).

Diphthongs

Diphthongs

Diphthongs are made by gliding from one vowel position to another.

In standard English, the first element is longer and stronger than the second.

- /ɛɪ/ (aim)** See p. 69, *Cued Articulation Consonants and Vowels*.
Spelling choices: a (baby), ai (aim), ay (day), au (gauge), ao (gaol), ea (steak), ey (they), ei (vein), aigh (straight), eigh (eight), a e (cake).
- /əʊ/ (owe)** See p. 70, *Cued Articulation Consonants and Vowels*.
Spelling choices: o (so), oo (brooch), oa (boat), oe (toe), ow (snow), oh (oh), ol (folk), ou (shoulder), au (mauve), ew (sew), o e (rope), owe (owe), ough (though).
- /aɪ/ (eye)** See p. 71, *Cued Articulation Consonants and Vowels*.
Spelling choices: i (I), y (fly), ie (pie), is (island), ig (sign), ui (guide), uy (buy), ye (dye), eye (eye), ais (aisle), igh (light), eigh (height), i e (kite).
- /aʊ/ (out)** See p. 72, *Cued Articulation Consonants and Vowels*.
Spelling choices: ou (out), ow (now), ough (bough).
- /ɔɪ/ (toy)** See p. 73, *Cued Articulation Consonants and Vowels*.
Spelling choices: oy (toy), oi (oil), uoy (buoy).
- /ɪə/ (ear)** See p. 74, *Cued Articulation Consonants and Vowels*.
Spelling choices: ear (ear), eer (deer), eir (weird), ere (here), ier (fierce).
- /ɛə/ (air)** See p. 75, *Cued Articulation Consonants and Vowels*.
Spelling choices: aer (aeroplane), air (air), are (bare), ear (pear), eir (their), ere (there), ayer (prayer), ayor (mayor),
- /ʊə/ (tour)** See p. 77, *Cued Articulation Consonants and Vowels*.
Spelling choices: our (tour), ure (cure), ewer (sewer).

Using Vowel Cues

Early phonics teaching

Some children may have difficulty discriminating between the short vowel sounds /æ/ and /ɛ/; cues may help them note the difference. Similarly with the close vowels /ɪ/ and /ɛ/.

Many teachers have found the short vowel cues very helpful in early phonics work.

English as a second language

There are more vowels in English than most other languages – 80% of the world's languages have only three to seven vowels (Papakyritsis & Granese, 2013); many languages have no diphthongs. Students whose first language is not English are likely not to be familiar with many of our English vowels, and they will substitute for them the vowel that is closest to it from their first language. They will require assistance with noting the contrasts between the target vowel and the vowel they are substituting for it. Cued Articulation can provide a visual, and motor, cue for these students.

Vowel disorders

Children with speech sound impairments which include vowel difficulties may have some limitation in auditory perception. Many children diagnosed with Auditory Processing Disorder demonstrate difficulty with vowels in both speech and spelling. Cued Articulation vowel cues can provide a visual cue for these children and can support intensive auditory discrimination training.

Classroom Implementation

Applying Cued Articulation to a sequenced classroom Phonological Awareness program - to a series of activities that would support a classroom literacy program based on sound principles: a structured phonics program with an emphasis on phonological awareness, and alphabetic knowledge.

Phonological Awareness develops from awareness of larger units (words, then syllables), through onset/rime awareness, ('onset' is the beginning of the word, before the vowel, and 'rime' is that part of the word following the onset), then to phonemic awareness (awareness of the individual sounds in words) (Cupples, 2001; Gillon, 2004; Melby-Lervåg, Lyster, & Hulme, 2012).

Sequence of activities:

1. Syllable segmentation
 2. Sound making and cueing
 3. Sound discrimination
- } Suitable for pre-school
- Sounds in words:
4. Sounds at the front of words
 - a. Matching sounds at the front of words
 - b. Isolating sounds at the front of words
 - c. Discriminating between sounds at the front of words
 - d. Onset-Rime awareness
 5. Segmenting words into all their sounds
 6. Vowels
 7. Consonant blends

The first three stages can be employed pre-school – activities suggested here will prepare pre-schoolers for their later literacy development. From stages 4 to 7 (sounds in words) Cued Articulation, when combined with activities used routinely in a classroom Phonological Awareness program, the sounds being targeted can be made more explicit.

1. Syllable Segmentation

Awareness of 'beats' in words – syllables: an early phonological awareness skill.

Syllable: a unit of pronunciation having one vowel sound, with or without surrounding consonants, forming the whole or a part of a word.

'Segmenting into syllables fosters the phonological skill of hearing parts of words; syllables are units that children become aware of well before they can discern phonemes' (Chapman, 2003).

2. Sound Making, Cueing and Listening

Introduce cues, with the sounds they accompany and, if appropriate, the letter for that sound. The rate at which you introduce new sounds will be determined by your school program, but, preschool, a sound a month may be a good target. In school, this may increase to a sound a week or even a sound a day!

Which Sound?

Consider:

-) Manner, Place and Voicing: the Features of Sounds, which are represented in Cued Articulation.
-) Normal developmental sequence of sounds.

We'll start with 'p' a sound that appears early in normal speech development and is made at the front of the mouth and can be clearly seen.

Introducing Sounds:

-) Describe what the mouth is doing to produce the sound. Let the child look in a mirror to see his lips coming together and then bursting open. Encourage him to note the feel of his lips bursting open and then hear the sound coming out.
-) Associate the sound (not the letter) with the appropriate colour – use balloons, streamers, coloured markers, coloured tiles, etc.
-) If ready for spelling, show the child that the letter for this sound is P, and that we will put an orange line under that letter.
-) Practise cues in rhymes or songs, eg 'Singing Alphabet' (Love & Reilly):

First group of Sounds:

Your first group of sounds should be sounds that differ from each other in as many ways as possible. So you should choose eg:

-) A stop, e.g. 'p'
-) A fricative, e.g. 's'
-) A nasal, e.g. 'm'
-) A vowel, e.g. 'a'
-) A contrasting stop, e.g. 'k'
-) A contrasting vowel, e.g. 'o'

3. Sound Discrimination

a. Discriminate between different sounding sounds

When a few cues have been introduced, use some activities to discriminate different sounding sounds (ie sounds that differ in more than one feature).

-) Select one Cued Sound. Children respond when they hear that sound only, not any other (make a range of consonant sounds in front of the class - children must put up their hand, clap, etc. when they hear the specified sound).
-) Four children hold coloured balloons or cards with the letter written on them; other children are asked to point to the right balloon when a sound is made, then are asked to say the sound using the cue.

b. Discriminate between similar sounding sounds

-) Choose pairs of sounds where the sounds differ in only one feature such as: s- sh, s - f, etc.
Ask children to discriminate between these sounds.
-) Choose two children, each holding a balloon of the same colour. The letter for one member of the sound pair is written on one balloon – the letter for the other member of that pair on the other. The children step forward or hold up their balloon when the teacher says their sound.

-) Play the Quiet Sound/Noisy Sound Game to discriminate between voiced and unvoiced consonants, but present the sound only, ie not in words. But keep this contrast till last: ‘... it may be important to keep voiced and voiceless consonants separate at first.... Knowing that children sometimes confuse consonants that are alike in all respects but voicing, extra time can be spent on this distinction.’ (Treiman, Broderick, Tincoff, & Rodriguez, 1998). Cueing will show the difference between the voiced (‘noisy’) and unvoiced (‘quiet’) sounds.

4. Sounds at the front of words

a. Matching sounds at the front of words.

-) ‘Sam is happy’ game
-) Sound search: Put a coloured card with the sound printed on it on a table (eg an orange card with p written on it). Children find objects whose name begins with ‘p’ from the Lucky Dip box. Say the names of the objects taken from the box; ask the class if those objects can go on the ‘p’ table. Children must listen for the initial sound.
-) Play the Train Game – each child is given a sound, with the letter on coloured card. They follow the driver around the classroom, and get off when the driver says a station that starts with their sound.
-) Read a story to the class and practise a particular cue every time a word starts with the sound, eg practise the ‘s’ cue in a story about Sammy Snake.

b. Isolating sounds at the front of words

Children listen for either ‘p’ or ‘k’ at the front of words: as the child pulls an object out of the box, ask the child does it begin with ‘p’ or ‘k’, cueing as you say the sound. The child responds with the sound and the cue, and place them either in the orange ‘p’ bag or the brown ‘k’ bag. Use objects beginning only with ‘p’ or ‘k’ (some words beginning with the ‘k’ sound will begin with the letter C).

c. Discriminate between sounds at the front of words

-) Discriminating between Different Sounding Sounds at the front of words.
-) For finer discrimination between sounds, use word beginning with similar sounds. e.g. the p-b game, t-d game, ch-j game, p-t-k- game, s - sh game. Cues will provide a clue about the difference between the sounds, but remember to leave the voiced/voiceless contrast still last.

d. Onset-rime awareness

‘...the onset is the initial consonant or consonant cluster present in many, but not all, English syllables; the rime is the remaining vowel and consonants’ (Anthony & Francis, 2005) so that in ‘cat’, ‘c’ is the onset and ‘at’ is the rime. In ‘spin’, ‘sp’ is the onset and ‘in’ is the rime.

-) Rhyming activities focussing on awareness of rhyme can lead into onset-rime awareness. Activities like the Rhyming Train Game will help.
-) Rhyme appreciation precedes Rhyme generation. Now we can help children generate rhyming words – here is one suggestion: say boat and vote, and the student supplies a rhyming word. He might suggest goat. You can

actually 'cue' the student in to generate rhyming words: If you start with 'bee', you can lead him into finding rhyming words by cueing new onsets.

d. Rime awareness

Focus on the 'Rime' - the remaining part of the word with activities such as the Rime Tree Game. Use cues to focus on the onset.

5. Segmenting words into all their sounds

a. Isolating all the sounds in words – 'Elkonin box' activity.

b. Identifying a Sound at the end and middle of words:

Use cues for final and middle consonants.

) Using a "Lucky Dip", children have to identify the object or picture, then cue the final sound in the word.

6. Vowels

a. Sound only:

) Contrast different vowels a-o
) Contrast closer vowels a-e

b. Sound at the front of words:

) Contrast different vowels a-o
) Contrast closer vowels a-e

7. Consonant Blends

Cued Articulation can help children note each element of a consonant blend, both where there may be a 'hidden element' and just for awareness of the two elements of a blend.

Jane Passy on YouTube

Jane Passy can be seen making the cues on YouTube at <https://www.youtube.com/watch?v=gyGX3RcLG74>

Aboriginal Sounds

Aboriginal languages' sounds

There are many Aboriginal languages, but they have a number of sounds in common. This module covers the main features of Aboriginal consonants. Speak to your local linguist to obtain detailed information and strategies for your local Aboriginal language.

When you compare two languages some sounds that are common to both, but each language will have sounds that the other does not have. The chart below shows the English consonant sounds that are not present in most Aboriginal languages with grey background (Butcher, 2008).

WHERE	both lips	lips and teeth	teeth	upper tooth ridge	palato-alveolar		hard palate	soft palate	glottis (throat)
HOW	bilabial	labio-dental	dental	alveolar		retroflex	palatal	velar	glottal
stops:	<u>p</u> <u>b</u>		<u>th</u> <u>dh</u>	<u>t</u> <u>d</u>		<u>rt</u> <u>rd</u> <u>t</u> <u>d</u>	<u>tj</u> <u>dj</u> <u>ty</u> <u>dy</u>	<u>k</u> <u>g</u>	?
nasals:	<u>m</u>		<u>nh</u>	<u>n</u>		<u>m</u> <u>n</u>	<u>ny</u>	<u>ng</u>	
fricatives:	<u>w</u> <u>h</u>	<u>f</u> <u>v</u>	<u>th</u> <u>th</u>	<u>s</u> <u>z</u>	<u>sh</u> <u>ʒ</u>		<u>ç</u>		<u>h</u>
affricates:					<u>ch</u> <u>j</u>				
liquids:			<u>lh</u>	<u>rr</u>		<u>r</u>			
						<u>rl</u> <u>l</u>	<u>ly</u>		
glides:	<u>w</u>						<u>y</u>		

You will notice that these are all the fricatives and affricates. Most Aboriginal languages do not have fricatives or affricates.

However, Aboriginal languages have additional stops, nasals and liquids – shown in blue background: Aboriginal languages demonstrate fewer Manners of Articulation than English, but a greater number of articulatory placements.

Although we can see here that Aboriginal speakers have stops in the same placement columns as English stops, that is, bilabial, dental and velar stops, they are not made in the same way as in English. Many Aboriginal languages do not have a distinct contrast between voiced and unvoiced stops, so that we can't say there are the voiced and voiceless pairs, as we can for English. The stop sounds in Aboriginal languages are produced with less aspiration, or 'breathiness', different degrees of voicing and different speeds of releasing the

stop. Also, not all Aboriginal languages have both the voiced and unvoiced sounds. This also applies to the non-English stops we see here on this chart.

Although the written symbols for the Aboriginal bilabial, dental and velar stops are the same as the letters that spell the stops in English, the fact that they are produced slightly differently is reflected in the cues we use for these sounds if they are used in Aboriginal languages.

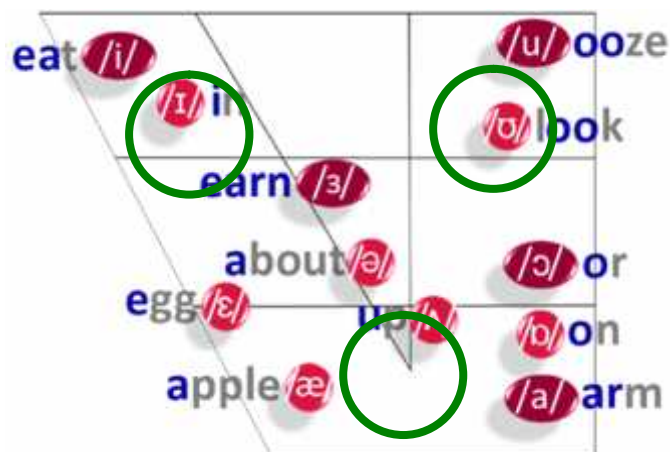
The cues for bilabial, dental and velar stops in Aboriginal languages have the same hand and finger shapes as the English stop cues, but they move sideways towards the mouth, rather than forwards, just to show that the sound is made slightly differently and to provide a contrast between the Aboriginal and English sounds.

In writing these languages, a choice had to be made between using a 'voiced' or 'voiceless' symbol as the letter for these sounds e.g. either a B or a P as the letter for a bilabial stop. For example, in some languages the 'voiced' symbol (B) is used for the beginning of words and the 'voiceless' symbol (P) for the ends of words.

So some of your students might have difficulty distinguishing between the English stop sounds. If you use the cue, they can see if it is the voiced or unvoiced sound. They are known as 'problem pairs' and Cued Articulation is a great help.

Aboriginal Vowels

Although there are differences in the vowel systems of the many Aboriginal languages, Aboriginal languages generally have three to five vowels. If there are three vowels they will be represented on the Vowel Quadrilateral as a high front vowel, approximately /ɪ/, a high back vowel approximately /ʊ/, and a low central vowel, /ɐ/. Some Aboriginal languages have both short and long vowels at these positions: /ɪ/, /ɪ:/; /ʊ/, /ʊ:/; /ɐ/, /ɐ:/. This last long /ɐ:/ sound sounds very like the Standard Australian /ɛ:/ sound.



Learning the Sounds of a Second language

For both the SAE speaker learning an Aboriginal language and the Aboriginal speaker learning SAE, we can expect to find them:

- substituting difficult sounds with the closest equivalent from their own language
 - having difficulty to hear, detect and distinguish certain sounds in the new language
 - having pronunciation difficulties because new tongue and mouth positions are required
- (taken from Berry & Hudson, 1997).

Substitution

Substitutions that might be made:

SAE		AAE
DVD	→	DBD
the	→	dhuh
leave	→	leap

Vowel substitution

Vowels will substituted in the same way, substituting the closest vowel for the target vowel. Professor Andy Butcher (2008) has described the substitutions that Aboriginal children may make in this chart. If the language has three vowels, they will be the three on the right of the chart; if five, they will be those in light blue. These vowels will be substituted for the vowel not in the first language.

- bet → bit
- born → boon
- bake → beek

Table produced from: Vowels of SAE [Standard Australian English] and their equivalent in basilectal Australian Aboriginal English. (Butcher, 2008)

	SAE	AAE (5V)	AAE (3V)
bee	ee /i:/	i /ɪ/	i /ɪ/
lip	i /ɪ/		
ear	ear /ɪə/		
play	ay /æɪ/		
egg	e /e/		
hair	air /eɪ/	e /ɛ/	
cat	a /æ/		
bird	ir /ɪɹ/		
bus	u /u/	u /ʊ/	u /ʊ/
car	ar /ɑɹ/		
pie	ie /iɛ/		
cow	ow /əʊ/		
sock	o /ɒ/	o /ɔ/	oo /u:/
corn	or /ɔɹ/		
boat	oa /əʊ/		
chook	oo /ʊ/		
boot	oo /u:/	oo /u:/	
boy	oy /ɔɪ/		

As there are no diphthongs in his first language, he would substitute the vowel from his first language that is closest to the first element of the target diphthong.

Discrimination

An Aboriginal speaker will have difficulty discriminating between the fricative sounds as they are not present in his first language.

Practice within voiced and voiceless pairs, * for example ‘s’ and ‘z’ will assist them.

Pronunciation

Articulating new sounds is very difficult, particularly in connected speech. Cues are helpful for students learning a second language, for the cues show the manner, place and voicing requirements of the new sound.

For example, for an Aboriginal student trying to master the ‘f’ sound:

-) The position of the cue shows where the sound is made – in this case the bottom lip;
-) The movement shows how the sound is made – a steady flow of air; and

) The one finger shows that the sound is unvoiced.

Plural and past tense

The use of endings to indicate past tense as in 'he jumped', 'they hugged', plural as in 'books', 'dogs' and possessive as in 'the boy's dog', does not feature in many Aboriginal languages, so that if your Aboriginal students are omitting these endings, it may be because they are not included in their first language. Aboriginal students learning Standard Australian English may have particular difficulty saying these plural 's', 'z' and past tense 't', 'd' endings, and there are three main reasons for this - Perceptual, Articulatory and Grammatical.

Perceptual

High rates of ear disease or otitis media in many Australian Aboriginal communities can cause conductive hearing loss. This hearing loss can make it difficult to hear high frequency sounds like these word endings (s, z, t,)

Articulatory

Traditional Aboriginal languages have few examples of more than one consonant together in word final position. Therefore, some Aboriginal students may have difficulty with these markers in English and for example they may pronounce * dogs as 'dog', or * chopped as 'chop'.

Grammatical

In traditional Aboriginal languages, * plural and past tense are not indicated by an ending, but rather by adding a word. So when speaking Standard Australian English Aboriginal students may say 'two dog', or 'lotta dog'. * Past tense is either not indicated in regular verbs as in 'he look for that kangaroo before' or another word is added, as in 'he bin jump'.

The possessive ending, usually indicated in English with an apostrophe S as in 'Pat's book', 'the dog's paw', may be omitted by Aboriginal students whose first language does not indicate possession in this way.

That same 'apostrophe S' ending which is the shortened form of the verb auxiliary 'is', as in 'it's raining', 'that's a kangaroo', 'he's tired', can also be omitted.

Cueing these markers help speakers 'see' the ending.

/h/ for Aboriginal speakers *

There is no /h/ sound in traditional Aboriginal languages, so it can be omitted when speaking English. For example saying 'happy' as 'appy', or you might also hear some people adding it to words for example 'huncler' for 'uncle'.

Cueing will show when there is a 'h' present.

Blends in Aboriginal languages

Consonant blends are rare in Aboriginal languages, so Aboriginal speakers may have difficulty articulating some English blends.

Aboriginal speakers may:

-) compensate by adding a neutral vowel /ə/ between the sounds in the blend, e.g. changing sleeping into 'səleeping'.
-) omit one element of the blend: e.g. stop → 'top'; post → 'pos'; wagged → 'wag'.

Cueing each sound in a blend will help the speaker see the sounds.

Some blends, however, are common in Aboriginal languages, e.g. liquid and stop blends, 'nt' or 'mp', so Aboriginal speakers do not have difficulty with these blends in English.

Aboriginal English speakers

Teachers working with students whose first language is Aboriginal English may find their students use some variations from Standard Australian English:

-) substitute 'f' for 'th', – 'fink' for 'think'
-) substitute 'v' for 'th' – 'togevev' for 'together'
-) substitute 'n' for 'ng' – 'hittin' for 'hitting'
-) substitute 'ngk' for 'ng' – 'somethink' for 'something'
-) delete Initial 'h' – 'Arry' for 'Harry'
-) Insert initial 'h' – 'huncle' for 'uncle'
-) delete 'n' in 'an' before a vowel – 'a apple' for 'an apple'
-) change voiceless stops to voiced stops particularly in nasal blends – 'jumbing' for 'jumping'
-) stopping of fricatives – 'mudder' for 'mother', 'bideo' for 'video'.

If your students want to master the sounds of Standard Australian English, cues will help them make the new sounds.

Cues for Aboriginal Sounds

Jane Passy has developed cues for the Aboriginal sounds to:

-) Help Aboriginal students who were learning English as a second language, and their teachers, to see the difference between the sounds of English and the sounds of Aboriginal languages.
-) Facilitate early literacy teaching where the children are taught in their first language.
-) Assist those learning an Aboriginal language as a second language.

Dental sounds

/t/ (th) Unvoiced dental stop

This sound is made by placing the tongue against the back of the slightly open teeth with the tongue tip protruding through the gap. The tongue seals against the alveolar ridge to stop the air. The air is then released to make the sound.

The cue is a single pointing finger by the side of the mouth like the 'th' cue. The finger is jerked forwards 2.5 centimetres when the stop is released.



/d/ (dh) Voiced dental stop

The voiced dental stop 'dh' is made in the same way as 'th' but with voicing.

The cue for 'dh' is the same as 'th' but with two fingers to indicate that the voice is used in this sound.



/ŋ/ (nh) Dental nasal

This sound is made in the same way as the start of 'th' but with the soft palate open to allow the air to flow out of the nose. As with all nasals, the voice is used.

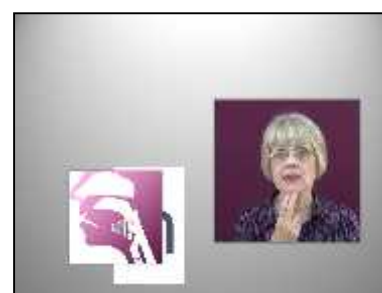
The cue is made by placing the fingers in the same shape as for the dental dh, but with the cue placed on the nose. The two fingers indicate a voiced sound.



/l/ (lh) Dental liquid

This sound is made in a similar way to 'th' with the tongue tip through the teeth, but with the sides of the tongue away from the alveolar ridge allowing the air to flow around the sides of the tongue. The voice is used.

The cue is similar to the 'l' cue but on the chin to indicate the tongue being further forward. As with the 'l' cue, the fingers rotate forward from the wrist as the sound is made.



Alveolar sound

/r/ (rr) Alveolar liquid (trill)

The sound is made by placing the tongue near the alveolar ridge and allowing the airflow to vibrate over the tongue. The voice is used for this sound.

The cue is similar to the cue for 'r' but with the cue moving forwards in a rolling motion. Two fingers are used for the voiced sound.



Retroflex sounds

/ / (rt) (t) Unvoiced retroflex stop

The tongue tip is curled back and the underside of the tongue seals along the alveolar ridge. The sound is made when the air is released. The voice is not used for this sound.

The cue is made by placing the index finger in a similar position as for 't', but the shape of the finger suggests the curled back placement of the tongue. Jerk the finger forward and outwards 2.5cms as the sound is produced.



/d/ (rd) (d) Voiced retroflex stop

The voiced retroflex stop 'rd' is made in the same way as 'rt' but with voicing.

The cue for 'rd' is the same as 'rt' but with two fingers to indicate that the voice is used in this sound.



/ŋ/ (rn) (r) Retroflex nasal

This sound is made in the same way as the start of 'rd' but with the soft palate open to allow the air to flow out of the nose. As with all nasals, the voice is used. For the cue, the hand is placed in same position as for 'n', but with the fingers curled in the same shape as for retroflex 'rd' - the shape of the fingers suggests the curled back placement of the tongue. The hand does not move on production of the phoneme.



/l/ (rl) (l) Retroflex liquid

This sound is made in a similar way to 'rd' with the tongue tip curled back but the underside of only the tip of the tongue touches the alveolar ridge - with the sides of the tongue are down allowing the air to flow around the sides of the tongue. The voice is used.

Place the hand, in the same shape as for the retroflex 'rd' cue, underneath the chin. As the tongue is released the fingers describe a small semi-circle downwards by action of the wrist.



Palatal sounds

/c/ (tj) (ty) Unvoiced palatal stop

Although the tip of the tongue is down, behind the lower teeth, the front and blade of the tongue articulate with the front and central hard palate, and the central sides of the tongue touch the inside of the tooth ridge, creating a seal – where the air is stopped. The sound is made when the air is released. The voice is not used for this sound.

For the cue, the curled finger represents the raising of the blade of the tongue. The finger is jerked sideways as phoneme is produced.



/J/ (dj) (dy) Voiced palatal stop

The voiced palatal stop 'dj' is made in the same way as 'tj' but with voicing.

The cue is the same as for tj but with two fingers.



/ / (ny) Palatal nasal

This sound is made in the same way as the start of 'dj' but with the soft palate open to allow the air to flow out of the nose. As with all nasals, the voice is used. Place the hand, in the same shape as for the palatal dj cue, but placed on the nose.



/k/ (ly) Palatal liquid

This sound is made with the tongue in a similar position to 'dj' with the tip of the tongue down, and the front and blade of the tongue touching the front and central hard palate. But the sides of the tongue do not touch the teeth, allowing the air to flow around the sides of the tongue. The voice is used as in all liquids.

Place the hand, in the same shape as for the palatal /dj/ cue, on the chin. As the sound is produced, the fingers describe a small semi-circle downwards by action of the wrist.

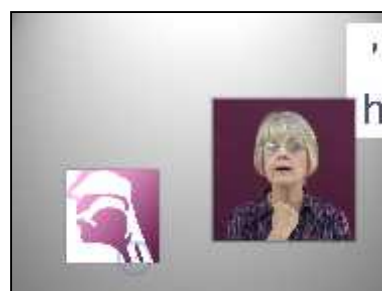


Glottal sound

/ʔ/ (ʔ) Glottal stop

To make this sound, close the vocal cords together quickly, and stop the air stop escaping – the sound is made when this stop is released. The vocal cords do not vibrate – the sound is voiceless.

Make a fist, then jerk it out 2.5cms as the phoneme is produced.



Triplets

There a lot of new sounds, particularly in the stops and nasals. It is helpful if we can group these sounds together. We can think of the sounds with the same place of articulation as triplets.

These are all the triplets In Aboriginal languages.

We are familiar with the 3 English triplets sounds. We can call them the Lip triplets, the Tooth ridge triplets and the Back triplets.

WHERE HOW	Lip triplets	Lips and teeth skin-need out	Teeth triplets	Tooth ridge triplets	nasals-alveolar	Curl back triplets	Roof triplets	Back triplets	groin throat glome
stops:	p b		th dh	t d		rt rd l d	lj dj ty dy	k g	' h
nasals:	m		nh	n		m n	ny	ng	
fricatives:	wh	f v	th th	s z	sh ʒ		ç		h
affricates:					ch j				
liquids:			lh	rr		rl l	ly		
glides:	w						y		

You will remember in 'p' 'b' & 'm' that the position of the lips is the same for all of them at the beginning of each sound. This is reflected in the cue showing the finger and thumb together – placed by the lips for the stops and on the nose for the nasal. The orange colour coding is also consistent within the triplets.

The same principle applies to the alveolar triplets 't' 'd' 'n' and velar triplets ('k' 'g' 'ng') – consistent cue and colour coding.

English shares these three triplets with many Aboriginal languages but, as mentioned earlier, there are slight differences with regard to the degree of aspiration, or breathiness, and voicing of these sounds in Aboriginal languages. To hear these sounds in your local language, ask your local linguist or local language speaker to demonstrate them for you.

If you look at the Aboriginal sound triplets you will see that colour coding is not used for the Aboriginal triplets.

These are the Teeth triplets. The air is stopped by the tongue resting between the teeth and the alveolar ridge with the tongue protruding through the teeth. The cue reflects the tongue protruding between the teeth with one or two fingers pointing forwards by the mouth or on the nose.

These are the Curl back triplets. The air is stopped by the underside of the curled back tongue tip sealing along the alveolar ridge. The cue reflects the curled back tongue with one or two fingers curled backwards by the cheek or on the nose.

These are the Roof triplets. The tip of the tongue is down behind the lower teeth. The front half of the tongue articulates with the front and central hard palate, and the central sides of the tongue touch the inside of the tooth ridge, creating a seal. The cue reflects the raising of the tongue to the roof of the mouth and its curving down to the teeth, with one or two fingers curled forwards by the cheek or on the nose.

Cued Articulation and Aboriginal Children

Cued Articulation: particularly helpful for Aboriginal children because:

- They are gestural language users, and readily bring this skill and experience to the use of Cued Articulation.

cued articulation course notes – aboriginal cues

-) Cued Articulation provides a visual channel and helps compensate for chronic otitis media, common in Aboriginal communities.
-) With no fricatives in their first language, and specific rules for the use of the voiced/voiceless stop pairs in words, 'problem pairs', Aboriginal children may need help with mastering the sounds of English.
-) Enables visual representation of morphological endings (tense, plurality, possession, etc.) – difficult for AAE/Kriol speakers where these are not indicated by word endings. Cued Articulation can help them 'see' these endings.

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Resources

Cued Articulation Consonants & Vowels, ACER shop.acer.edu.au/cued-articulation-consonants-vowels-revised-edition.html

Cued Articulation Consonants & Vowels, Cards

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Cued Articulation Consonants Wall Charts, ACER

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Cued Articulation Vowel Wall Charts, ACER

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Cued Articulation tablet App, itunes.apple.com/au/app/cued-articulation/id873057924?mt=8
play.google.com/store/apps/details?id=com.jdbtech.acer

Singing Alphabet www.pelicanalk.com

Webber Photo Phonology Minimal Pair Cards