

Using Cued Speech to develop Literacy

Rachel Rees, University College London
Cate Calder, Cued Speech Association UK

Importance of Phoneme - Grapheme Matching for Literacy

In reviewing a range of studies, Stanovich (1993) states that one of the most well-established conclusions in the behavioural sciences is the importance of teaching the alphabetic principle for the facilitation of early reading.



Importance of Phoneme – Grapheme Matching for Literacy

Phonological awareness at the level of the phoneme (phoneme awareness) and letter sound knowledge measured at the onset of literacy instruction, seem to be reliable predictors of reading and spelling for typically developing children in languages with alphabetic orthographies (Caravolas et al., 2012).



For hearing and deaf children:

Phonology is not **SUFFICIENT** to learn to read but it is **ESSENTIAL**.

matching phonemes to graphemes



awareness of phonemic contrasts



accurate perception of differences between phonemes



auditory cues

lipreading cues

Relying heavily on lipreading?

Many groups of phonemes share the same place of articulation.

Examples:

/p/, /b/, /m/

/t/, /d/, /s/, /n/, /z/, /r/.

So potentially, for deaf children relying on lipreading, a system that increases the power of lipreading to identify phonemes will aid the development of speech perception and literacy.

THAT is the AIM of CUED SPEECH –
to be an AID to LIPREADING.



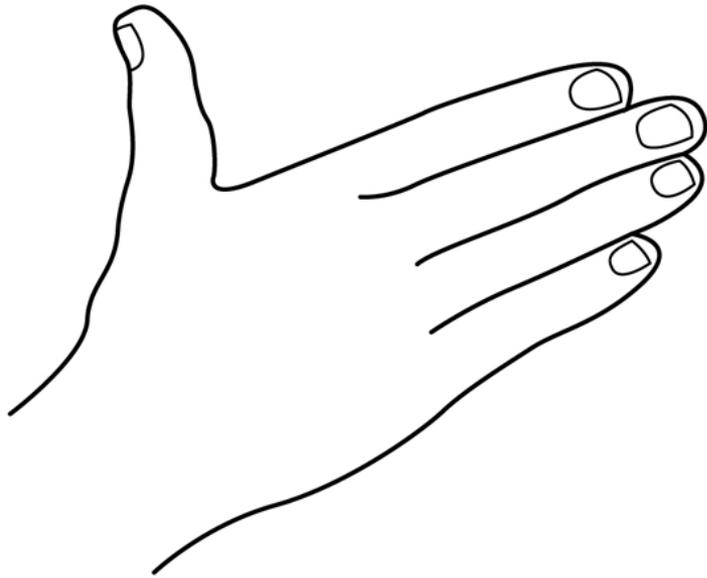
How does CS aid lipreading?

- ▶ For detailed information see:

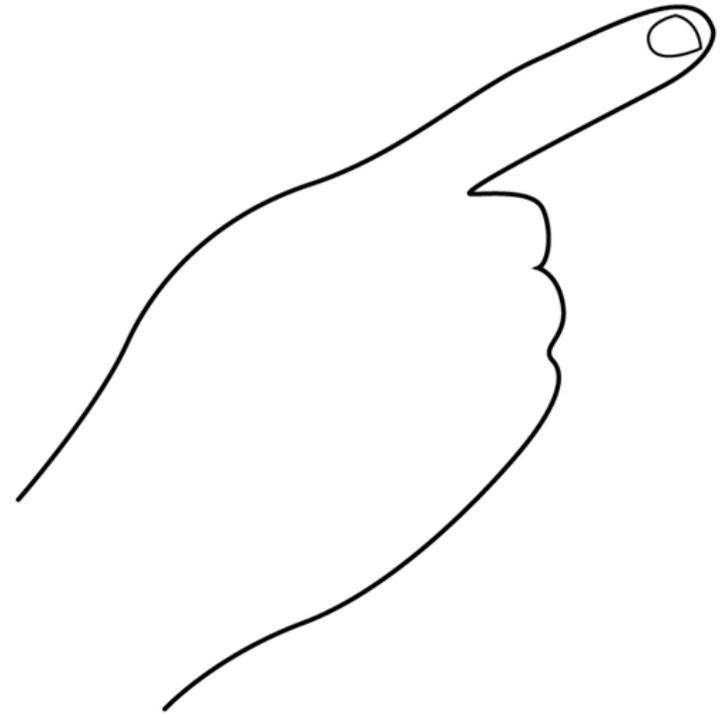
www.cuedspeech.org.uk

Cueing involves the use of handshapes and hand positions to disambiguate lip patterns that look similar

Handshapes for Consonants



/t/, /m/, /f/

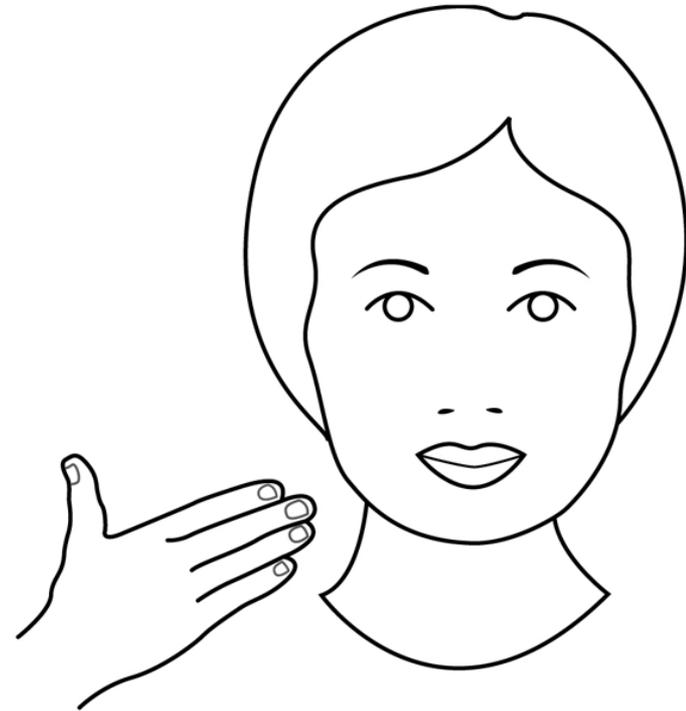


/d/, /p/, /ʒ/

Positions for Vowels



/ʊ/, /ɪ/, /æ/



/ɑ/, /ɜ/, /ə/ and "neutral"

To cue words, put the consonant handshape in the position of the vowel that follows.



Many studies have shown that deaf children whose parents have used CS from 2 years old have superior skills in phonological awareness and literacy skills. Often this involves phonological awareness and literacy skills that are age-appropriate or advanced.

Examples:

- Bouton et al, 2011
- Charlier and Leybaert, 2000
- Colin et al, 2013
- Crain and LaSasso, 2010
- Rees and Bladel, 2013

Many studies have shown that deaf children whose parents have used CS from 2 years old have superior skills in phonological awareness and literacy skills. Often this involves phonological awareness and literacy skills that are age-appropriate or advanced.

Examples:

- Bouton et al, 2011
- Charlier and Leybaert, 2000
- Colin et al, 2013
- Crain and LaSasso, 2010
- Rees and Bladel, 2013

CUED SPEECH



Makes spoken language visible

Cued Speech

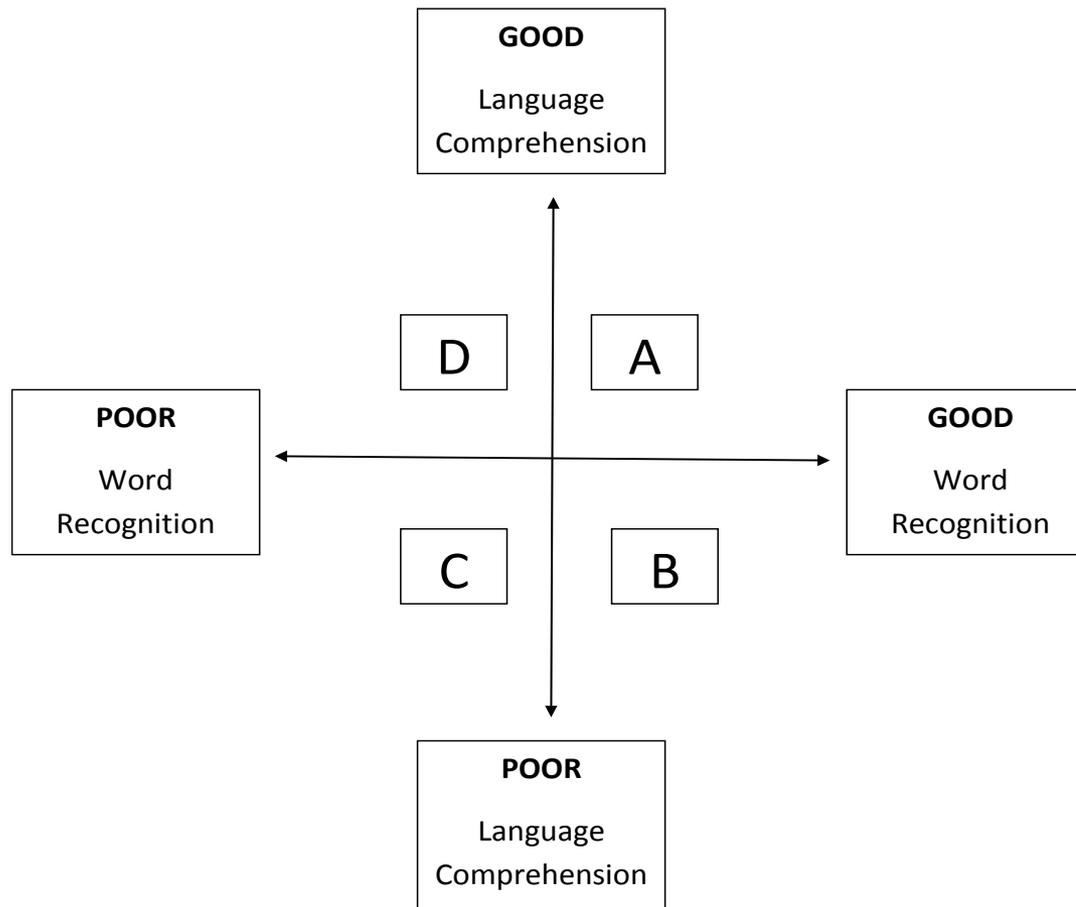
- Lip reading aid (not ‘another language’)
- Manually encodes the phonology of many spoken languages
- Families and educators cue FOR deaf children – only while they need it.
- Over 60 languages and dialects can be ‘cued’.

Arabic
Bengali
Cantonese
Catalan
Czech
German
Greek
Russian
Hebrew
Hindi

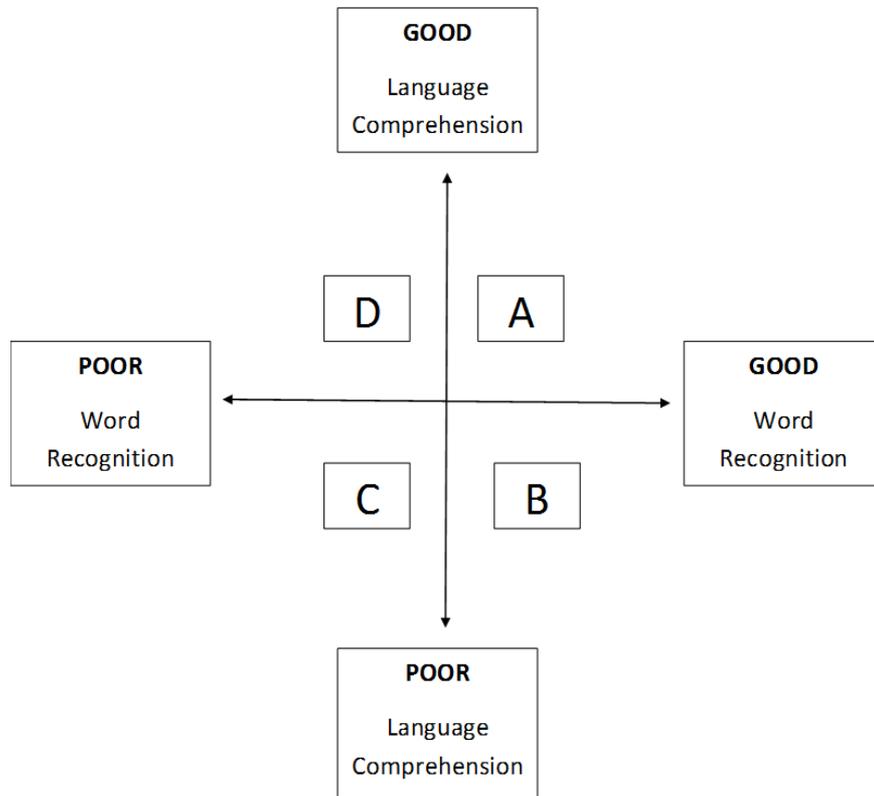
Danish
Dutch
Swedish
Finnish
French
Polish
Italian
Japanese
Hungarian
Urdu

Jim Rose – 2006 Review of the Teaching of Early Reading

Rose Report Model - Literacy achieved in box 'A' when **both** areas of skill achieved, good language comprehension and good word recognition.



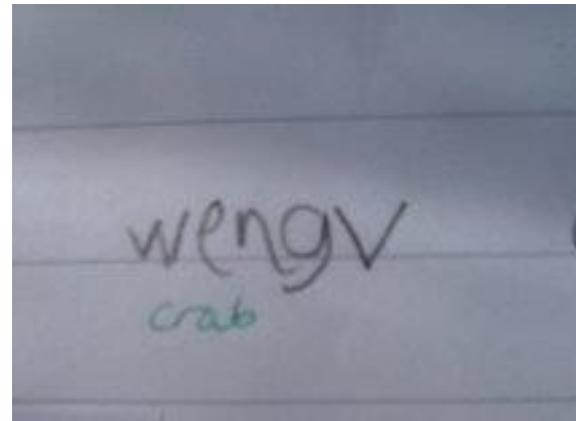
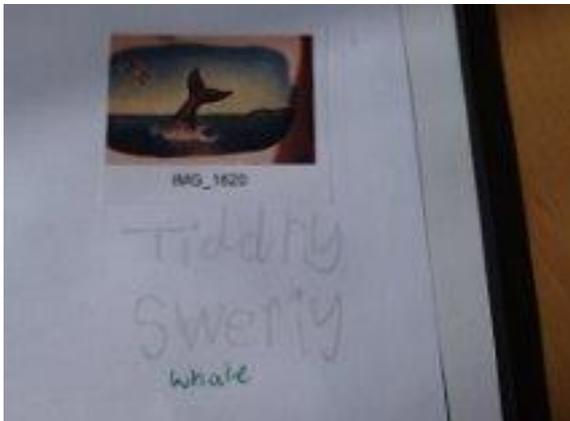
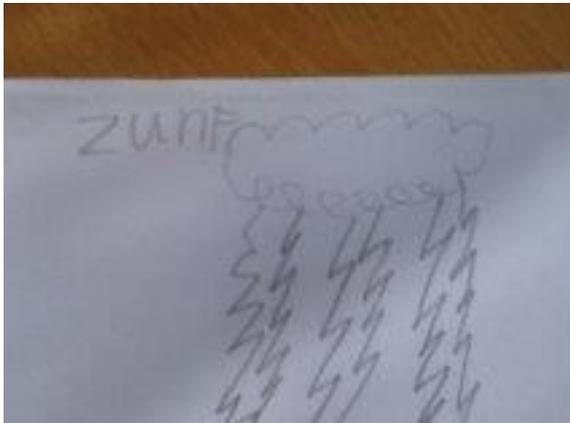
How does this impact the children?



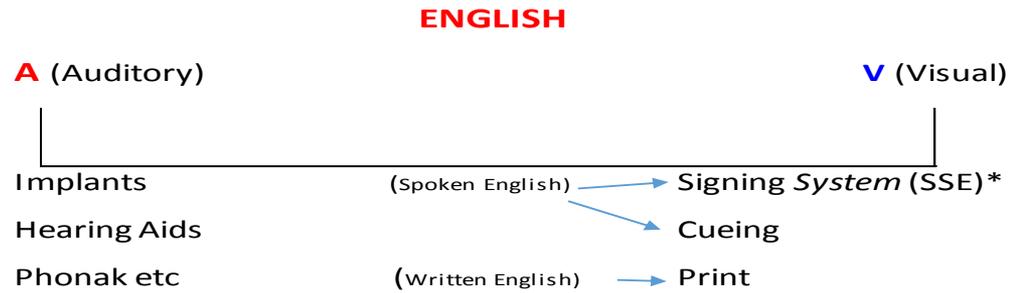
- 1. Expressive language
- 2. Reading
- 3. Writing

3. Writing

- Writing from signed words



Total Communication Model
'Clearly differentiate *Language* from *Mode*'



***Signing System: Using certain signs to support certain words when *speaking English* (integrity of English is maintained).**



***Natural BSL: Sign language as used by two Deaf adults talking to each other (integrity of BSL maintained).**

Example of results

6 students (5 with additional learning difficulties) 18 – 28 hours of exposure to Cued English over 9 month period.

Results included:

Phonetic Awareness improved by 2 years and 3 months overall and the average Phonetic Awareness Age improved by 44 months (**one subject made a 6 year 5 month leap in 9 months**).

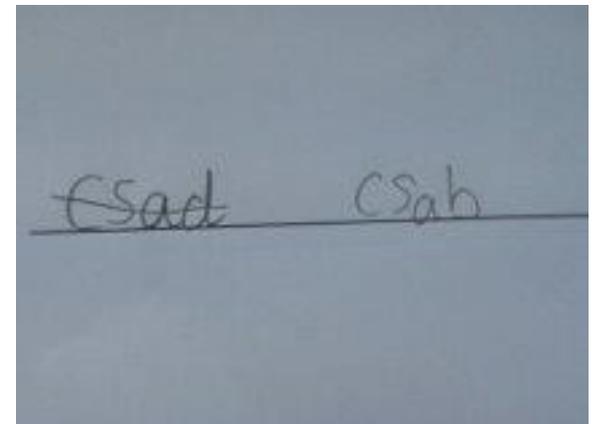
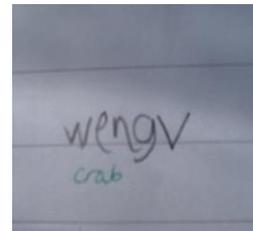
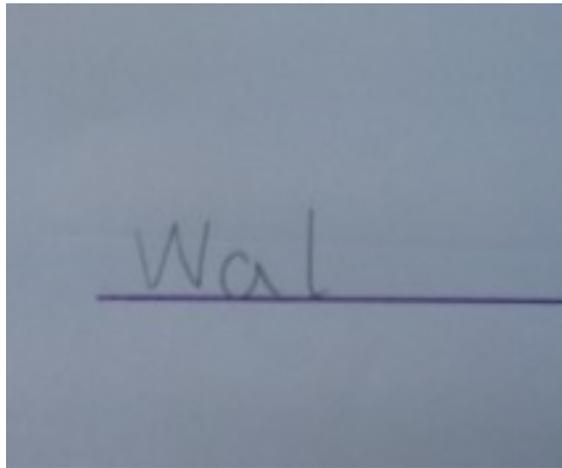
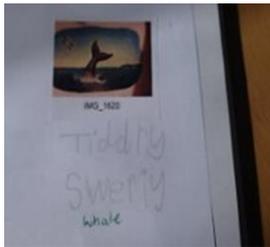
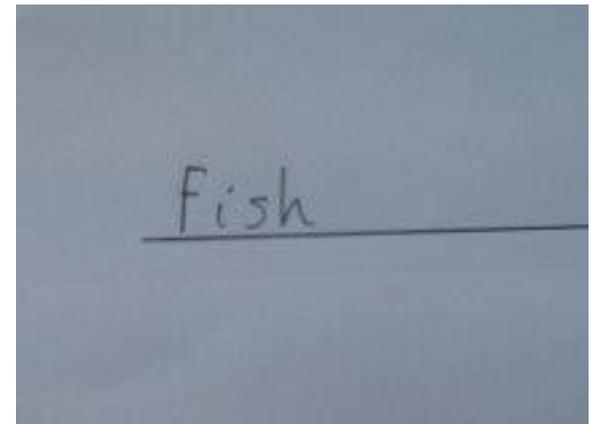
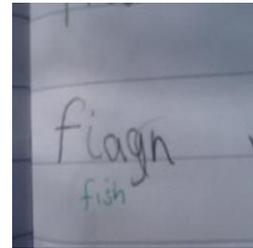
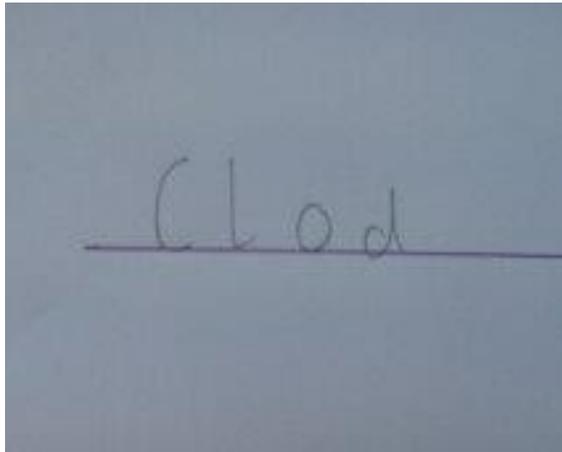
Literacy improved by 6 months, with reading 3 by months and spelling by 6 months.

Lip-reading improved by 66%

Lip-pattern production improved by 40.1%

Throughout... it was reported that the pupils' confidence and attitude towards the English language had improved. As the pupils developed their knowledge of the Cued Speech system, their English skills improved in correlation...those with the most Cued Speech exposure developed the most.

Writing from Cued words



Writing from Cued Words **and** THRASS

Clod



Cloud

Wal



Whale

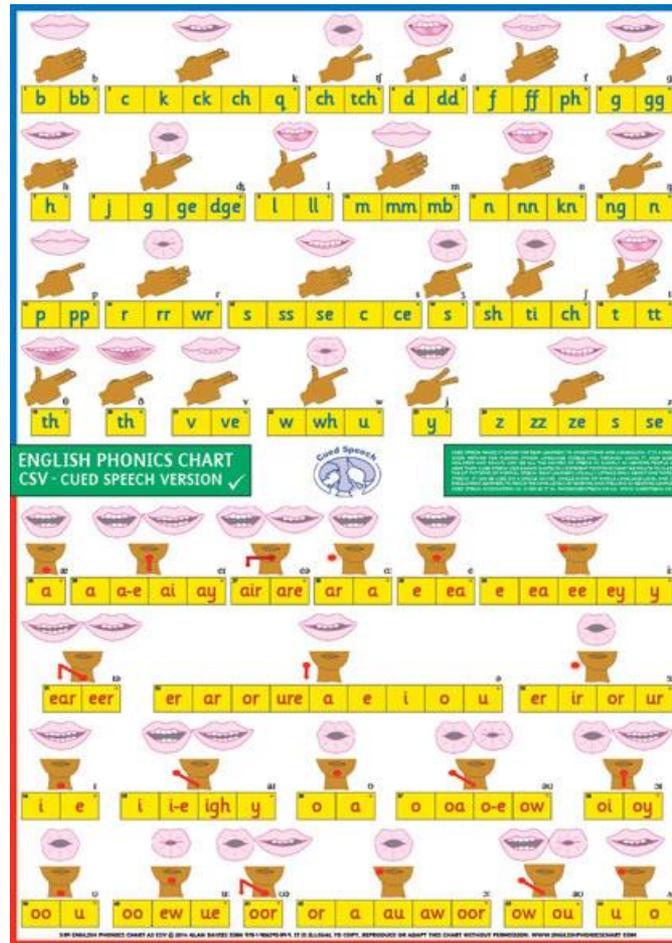
csad csah



Crab

THRASS chart

(Teaching Handwriting, Reading and Spelling Skills)



Single Word Analysis Skills through 'GRIDS'

1. Identify Consonant and Vowel phonemes within a word.
2. Identify CV blends within a word.
3. **Identify which letters correspond to which phoneme.**
4. **Understand the concept of one letter, two letter, three letter and four letter spelling choices for a single phoneme.**
5. Understand the concept of 'one sound but many possible ways to spell it'.
6. Identify the number of syllables in a word.
7. **Synthesise** - break a whole word into parts.
8. **Blend** - build a whole word from parts.
9. Memorise and use 'mental map' of the THRASS chart.
10. Memorise the common spelling choices for phonemes.
11. Recognise and use IPA.
12. Write and read Cue Script.
13. Cue individual phonemes.
14. Cue read individual phonemes.
15. Use appropriate lip-patterns for individual phonemes.
16. Use appropriate lip-patterns for CV blends (develop natural speech pattern).
17. Cue CV blends.
18. Cue read CV blends.
19. Cue whole words – from cue script and from memory.
20. Cue read words.
21. Read written words.
22. Expand single words into sentences.

THRASS and Cued Speech for phonics skills

WORD:	morning					How m any letters?	How m any sounds?	How m any syllables?
						7	5	2
THRASS KEY WORDS →	mouse	fork	net	tin	king			
LETTERS →	m	or	n	i	ng			
/IPA/	/ m /	/ ɔː /	/ n /	/ i /	/ŋ/			
CUED SOUNDS →		M		T				
CUED WORD →								
SENTENCE →	I walked to school this morning.							

Example of results

	Reading High Frequency Words Test July 2014	Reading High Frequency Words Test March 2015	PM Benchmarking Reading Assessment July 2014	PM Benchmarking Reading Assessment March 2015
Student 1	3/45	52/195	Failed to score	90% at level 6
Student 2	6/45	52/ 195	36% at level 2	92% at level 3
Student 3	6/45	58/195	80% at level 2	87% at level 6
Student 4	11/45	53/195	83% at level 2	92% at level 3

(20 to 50 minutes a week exposure for 7 months, phonics and single word focus only.)

REFERENCES

- Bouton, S., Bertoncini, J., Serniclaes, W., & Colé, P. (2011). Reading and Reading-Related Skills in Children Using Cochlear Implants: Prospects for the Influence of Cued Speech. *Journal of Deaf Studies and Deaf Education*, 16(4), 458–473. <http://doi.org/10.1093/deafed/enr014>
- Caravolas, M., Lervåg, A., Mousikou, P., Efrim, C., Litavský, M., Onochie -Quintanilla, E., Salas, N., Schöffelová, M., Defior, S., Mikulajová, M., Šeidlová-Málková, G., Hulme, C.(2012) Common Patterns of Prediction of Literacy Development in Different Alphabetic Orthographies. *Psychological Science* 23, 678–686.
- Charlier, B., & Leybaert, J. (2000). The rhyming skills of deaf children educated with phonetically augmented speechreading. *Quarterly Journal of Experimental Psychology*, 53, 349-375.
- Colin, S., Leybaert, J., Ecalle, J., & Magnan, A. (2013). The development of word recognition, sentence comprehension, word spelling, and vocabulary in children with deafness: A longitudinal study. *Research in Developmental Disabilities*, 34, 1781-1793.
- Crain, K. L., & LaSasso, C. . (2010). Generative rhyming ability of 10- to 14-year-old readers who are deaf from oral and cued speech backgrounds. In C. J. LaSasso, K. L. Crain, & J. Leybaert (Eds.), *Cued speech and cued language for deaf and hard of hearing children* (pp. 345–358). San Diego: Plural Publishing.
- Kyllo, K. (2010). A Bilingual (ASL and cued American English) program for deaf and hard of hearing students: Theory to practice. In C. LaSasso, K. L. Crain, & J. Leybaert (Eds.), *Cued Speech and cued language for children who are deaf or hard of hearing* (pp. 375-417). San Diego, CA: Plural Publication Inc.
- Rees, R., & Bladel, J. (2013). Effects of English Cued Speech on Speech Perception, Phonological Awareness and Literacy: A Case Study of a 9-Year-Old Deaf Boy Using a Cochlear Implant. *Deafness & Education International*, 15(4), 182–200. <http://doi.org/10.1179/1557069X13Y.0000000025>
- Stanovich, K.E. (1993) Romance and Reality. *The Reading Teacher* 47, 280–291.