

# Analysing Spoken Words

Teaching Resources



## Introduction

- a) Basic logic
- b) Full workflow
- c) Key concept: invented spelling

## Equipment

- a) Overview
- b) Sound waves (whole words)
- c) Sound waves (syllables)
- d) Popsicle sticks
- e) Sound waves (phonemes)
- f) Phoneme tiles
- g) Letter tiles
- h) Blank tiles
- i) Sample images (word pictures)
- j) Coloured tokens
- k) Blank space to write

## Recording Progress

- a) Keeping a record (each word - example)
- b) Keeping a record (each word - blank)
- c) Keeping a record (all words)
- d) Keeping a journal
- e) Developing a student profile
- f) Planning/progress sheet
- g) Lesson planning
- h) Lesson reflection

## Additional Resources

- a) Recommended book (activities)
- b) Phonemic awareness development
- c) Phoneme map
- d) Phoneme-letter map
- e) Phoneme-letter probabilities (consonant & vowel sounds)
- f) Letter-grapheme map
- g) Common onsets-rime patterns
- h) Six common syllables types
- i) Example semantic map
- j) Sentence cycle



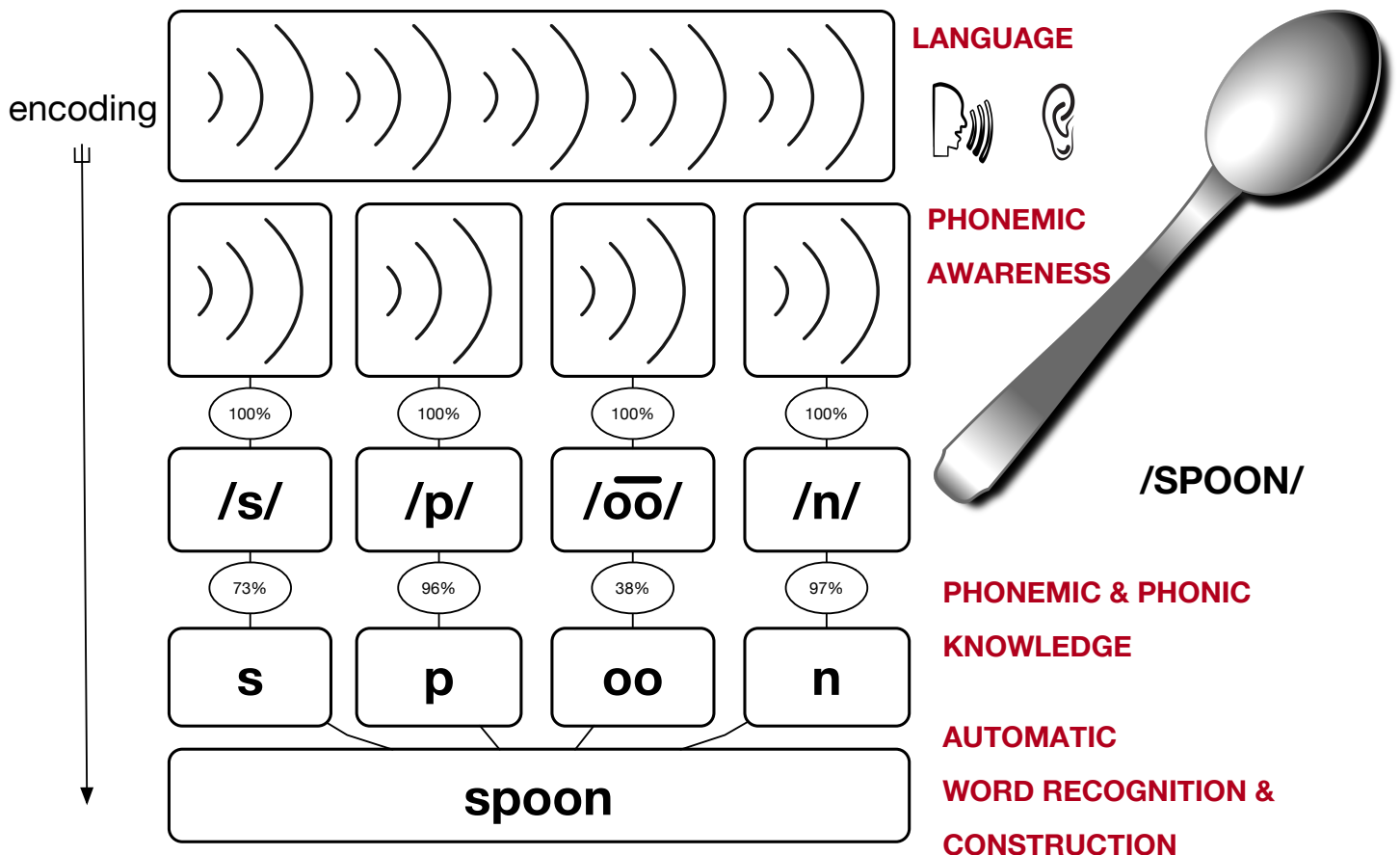
# Introduction

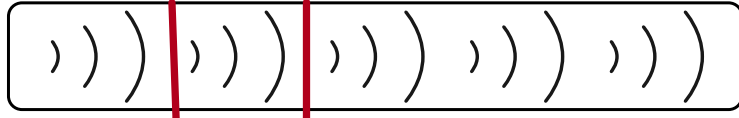


“The beginning reader’s initial task is to learn how the **spoken language** they know relates to the **written code** they are learning.” (Seidenberg, 2017, p 22)

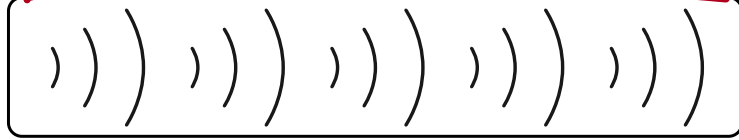
Spoken words [need] to be treated as consisting of component parts ... we now consider [this] an ordinary, teachable aspect of learning to read: **phonological awareness**. (Seidenberg, 2017, p. 63)

Seidenberg, M. (2017). Language at the speed of sight: how we read, why so many can't, and what can be done about it. New York: Basic Books.

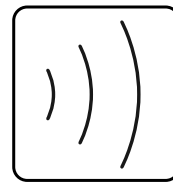
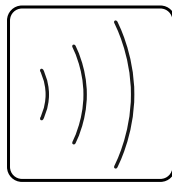




"The **helicopter** flew over the house"  
whole word in a sentence



"Helicopter"  
whole word



"He-li-cop-ter"  
in syllables



fully segmented into phonemes

/h/

/e/

/l/

/i/

/k/

/o/

/p/

/t/

/er/

/h/

/e/

/l/

/i/

/k/

/o/

/p/

/t/

/er/

98%

91%

91%

66%

73%

79%

96%

97%

—

h

e

l

i

c

o

p

t

er

helicopter



has rotating blades



aircraft



rescue vehicle



hovers



used to watch traffic



can land on buildings

The helicopter flew over the house quickly.

what?

did what?

where?

how?

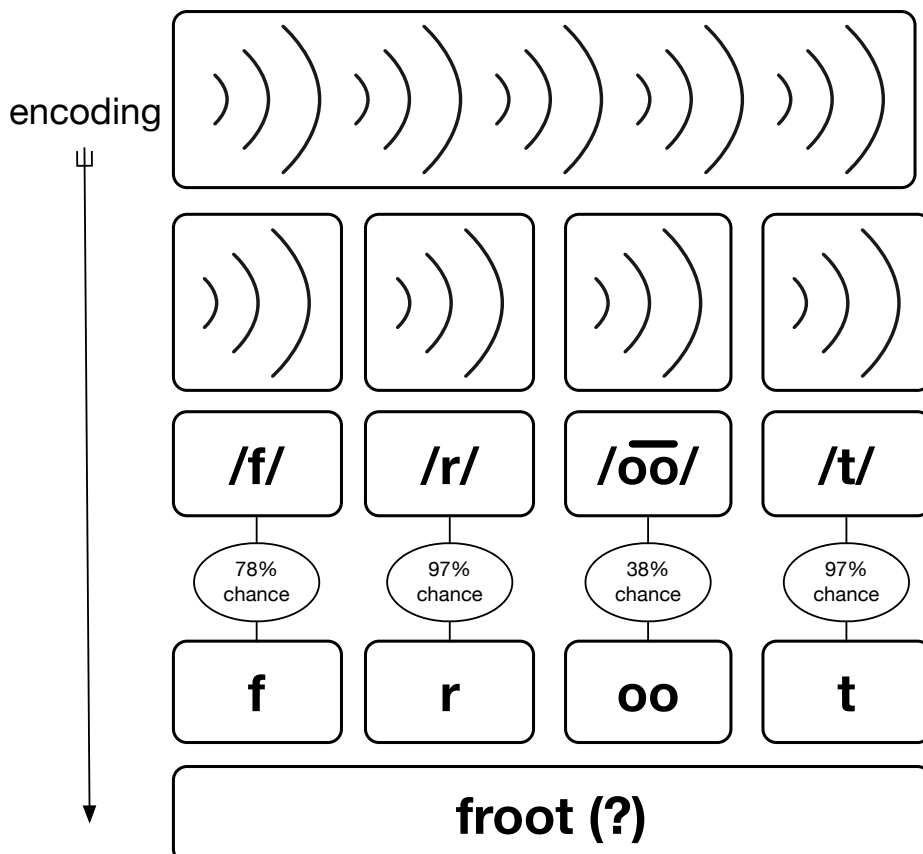


## Invented Spelling ...

"Before children attain a conventional level of spelling ... they use what they know about the phonology and orthography to create novel forms of spelling.

These **invented spellings** provide a window into their developing awareness of the alphabetic principle." (p 77)

Ouellette, G., & Sénéchal, M. (2017). Invented spelling in kindergarten as a predictor of reading and spelling in Grade 1: A new pathway to literacy, or just the same road, less known? *Developmental Psychology*, 53(1), 77–88.



"The beginning reader's initial task is to learn how the spoken language they know relates to the written code they are learning." (Seidenberg, 2017, p 22)

**froot → frute  
→ fruit**



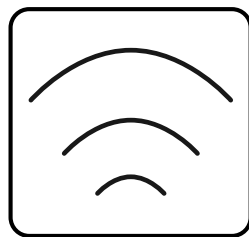
# Equipment



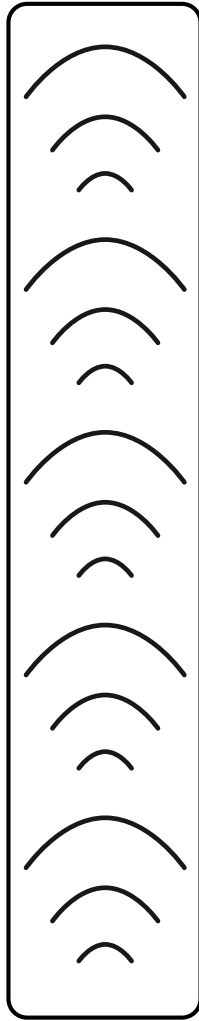
# Equipment: Overview



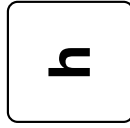
*pictures*



*syllable  
"sound waves"  
popsicle sticks  
(syllable breaks)*



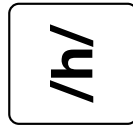
*whole word "sound waves"*



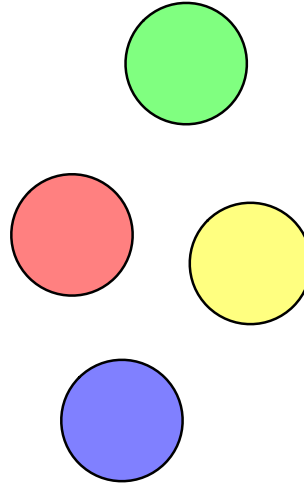
*letter tile*



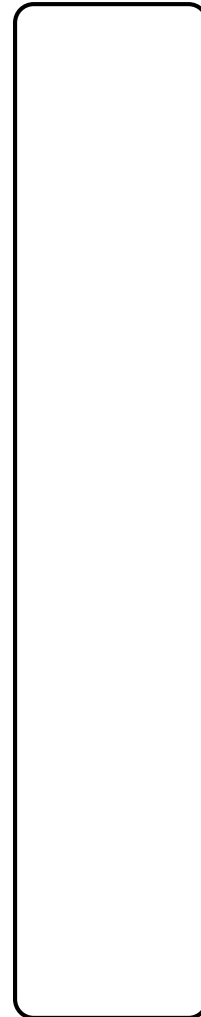
*phoneme  
"sound waves"*



*phoneme  
tile*

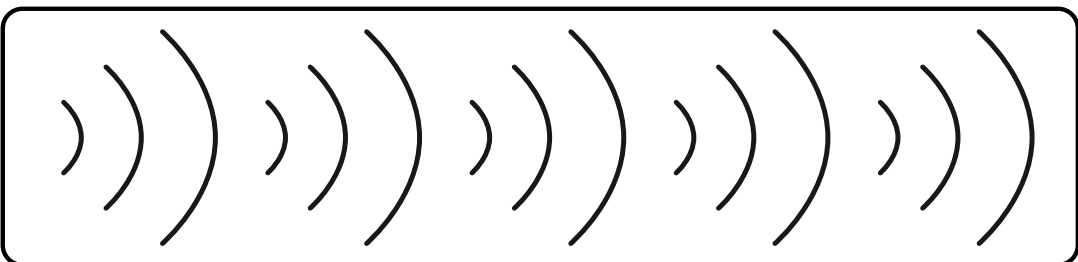
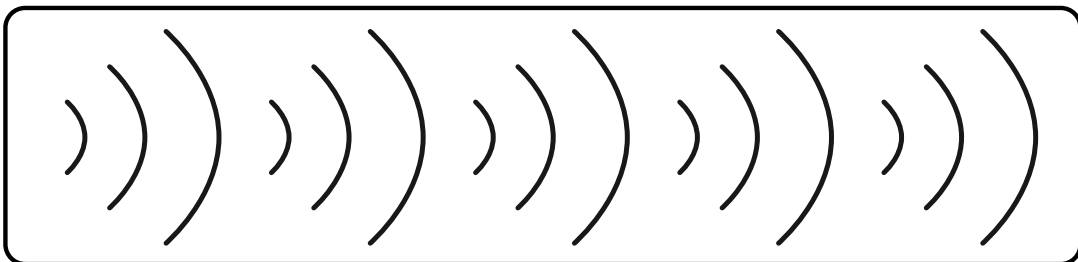
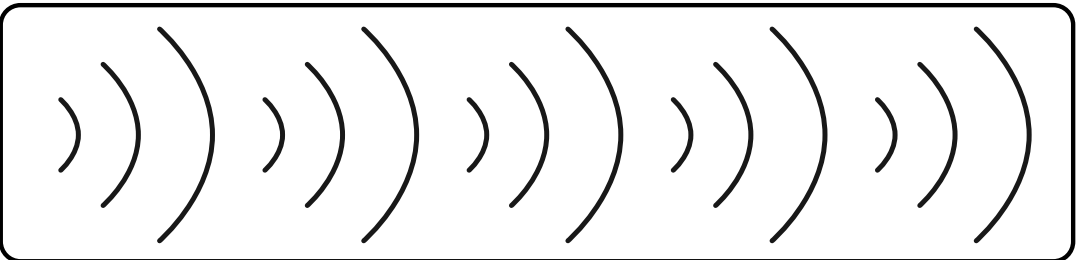
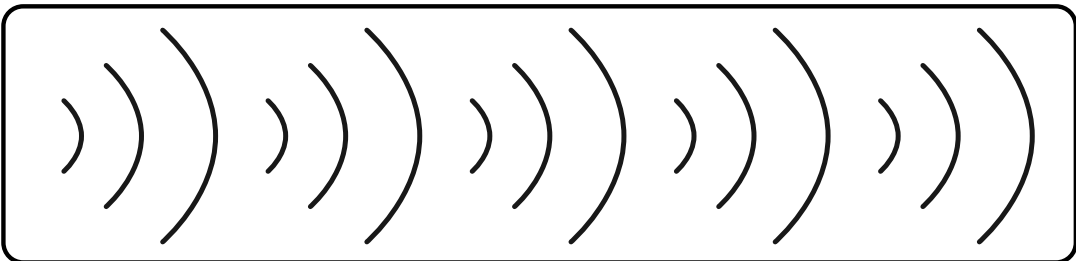
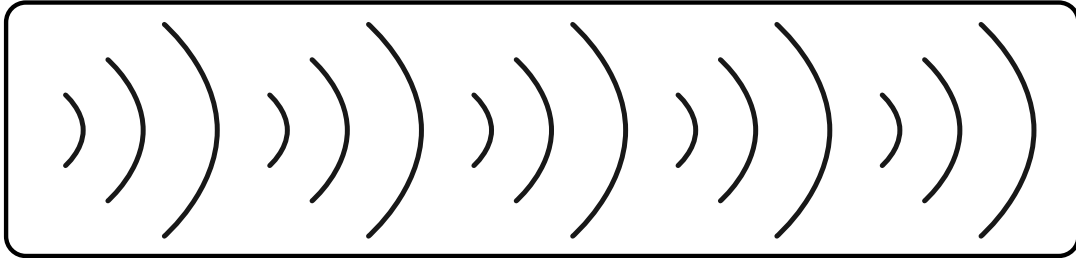


*coloured  
tokens*



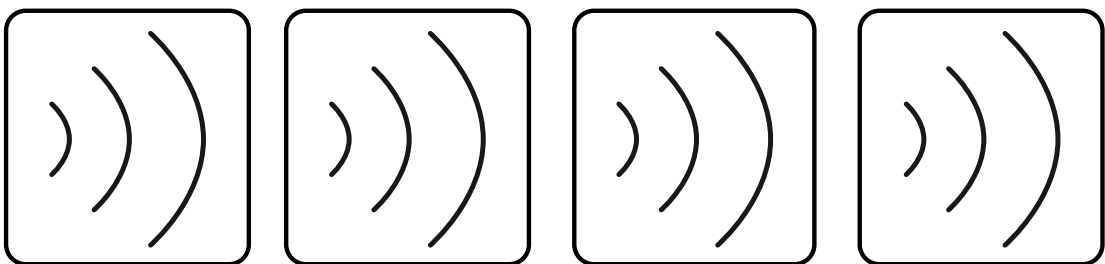
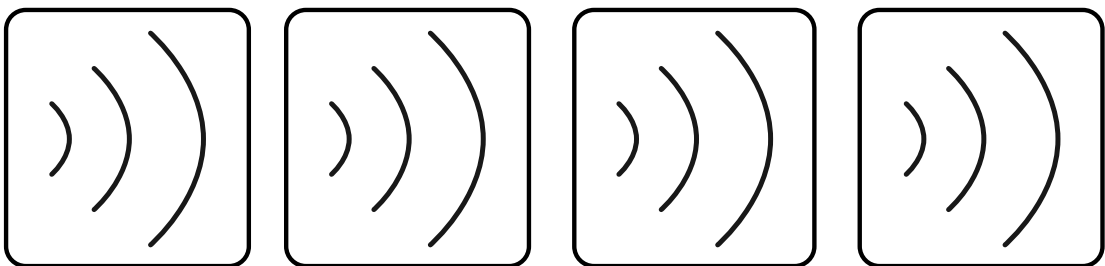
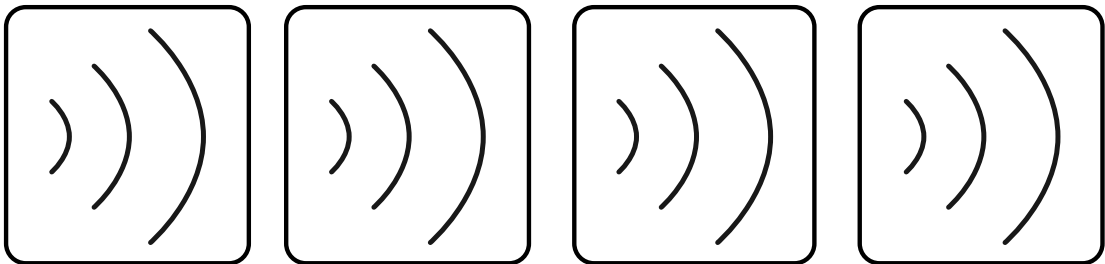
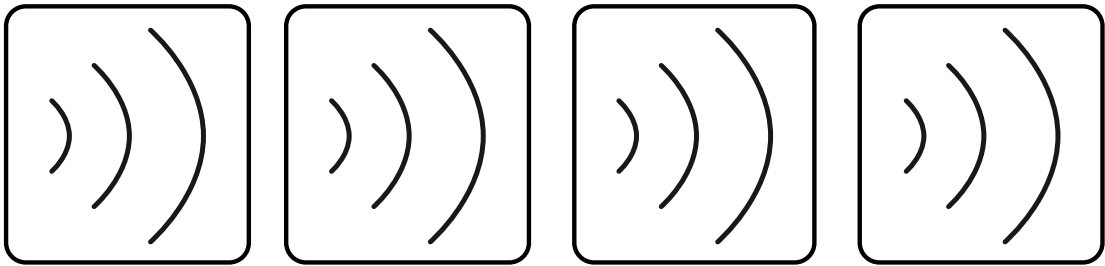
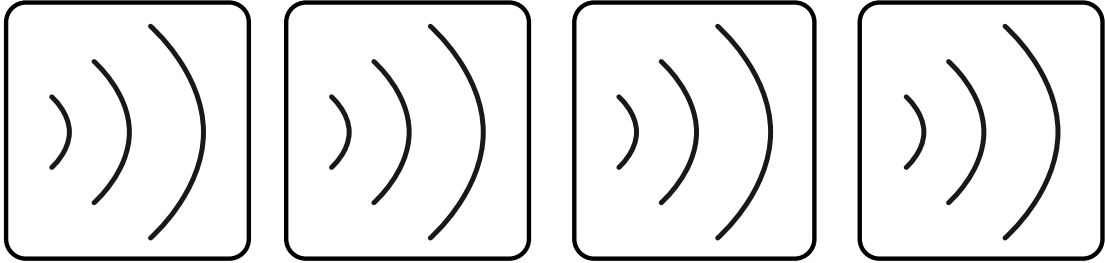
*space to write words and sentences*





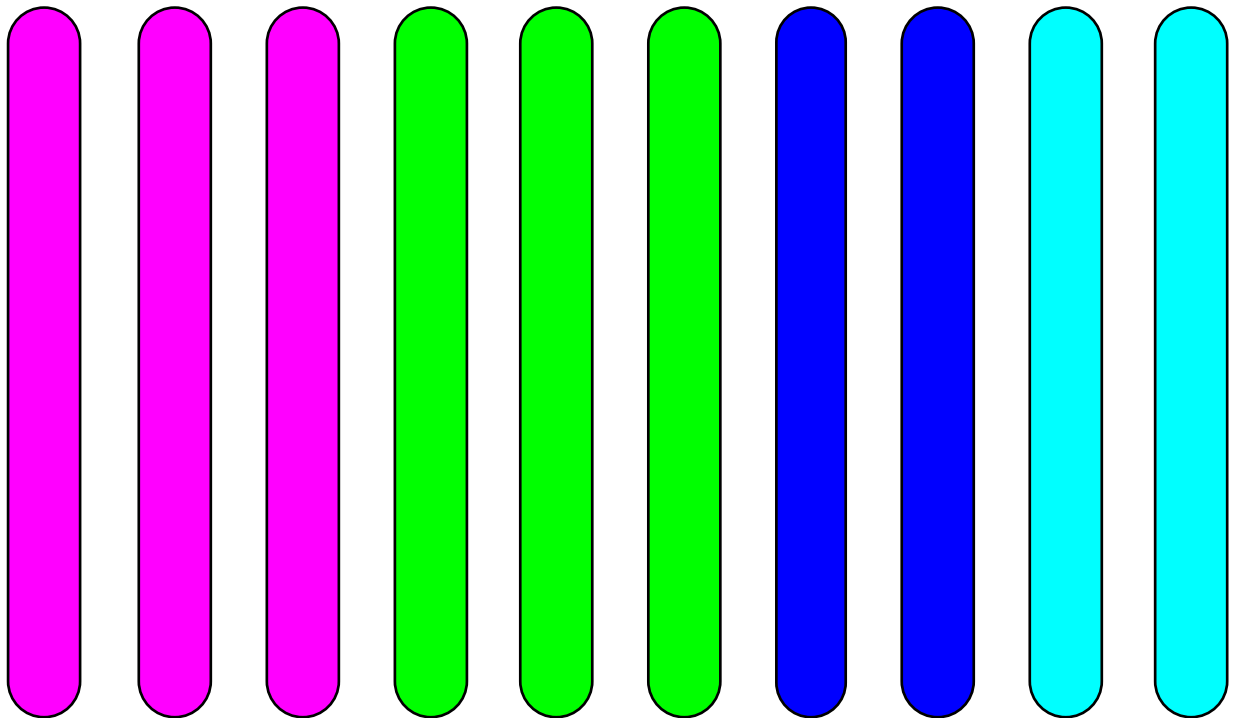
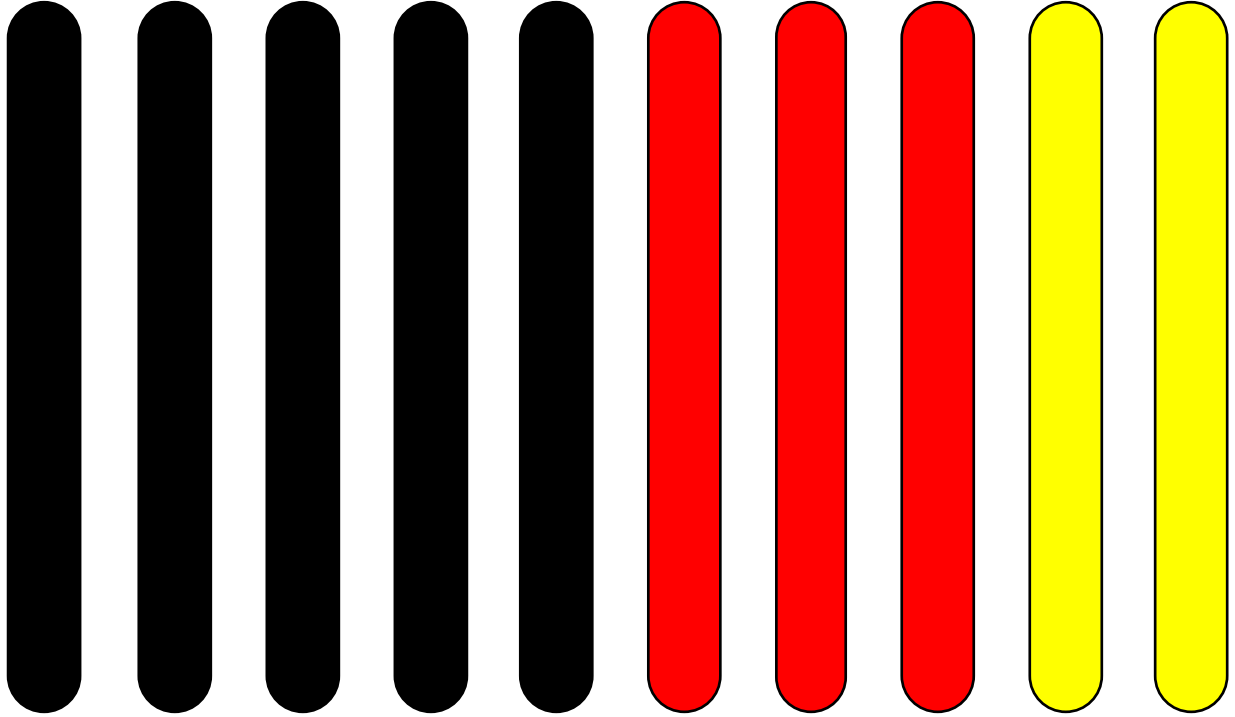
# Sound Waves (Syllables)

---



# Popsicle Sticks

---



# Sound Waves (Phonemes)

)))	)))	)))	)))	)))	)))
)))	)))	)))	)))	)))	)))
)))	)))	)))	)))	)))	)))
)))	)))	)))	)))	)))	)))
)))	)))	)))	)))	)))	)))
)))	)))	)))	)))	)))	)))
)))	)))	)))	)))	)))	)))
)))	)))	)))	)))	)))	)))



# Phonemes Tiles: Consonants

<sup>3</sup>  
/b/

<sup>3</sup>  
/ch/

<sup>3</sup>  
/d/

<sup>5</sup>  
/f/

<sup>4</sup>  
/g/

<sup>2</sup>  
/h/

<sup>4</sup>  
/j/

<sup>5</sup>  
/k/

<sup>3</sup>  
/l/

<sup>4</sup>  
/m/

<sup>6</sup>  
/n/

<sup>2</sup>  
/ng/

<sup>2</sup>  
/p/

<sup>1</sup>  
/kw/

<sup>4</sup>  
/r/

<sup>7</sup>  
/s/

<sup>14</sup>  
/sh/

<sup>7</sup>  
/zh/

<sup>6</sup>  
/t/

<sup>1</sup>  
/th/

<sup>3</sup>  
/v/

<sup>2</sup>  
/w/

<sup>1</sup>  
/hw/

<sup>2</sup>  
/wə/

<sup>1</sup>  
/ks/

<sup>2</sup>  
/y/

<sup>6</sup>  
/z/



# Phonemes Tiles: Vowels

<sup>4</sup>  
/ă/

<sup>9</sup>  
/ā/

<sup>4</sup>  
/ē/

<sup>10</sup>  
/ē/

<sup>2</sup>  
/i/

<sup>8</sup>  
/i/

<sup>1</sup>  
/ō/

<sup>7</sup>  
/ō/

<sup>2</sup>  
/ū/

<sup>3</sup>  
/ū/

<sup>4</sup>  
/oo/

<sup>9</sup>  
/oo/

<sup>3</sup>  
/ow/

<sup>2</sup>  
/oy/

<sup>7</sup>  
/aw/

<sup>7</sup>  
/er/

<sup>4</sup>  
/or/

<sup>2</sup>  
/ar/

<sup>3</sup>  
/yur/

<sup>5</sup>  
/air/

<sup>3</sup>  
/ear/

<sup>5</sup>  
/ə/



# Letter Tiles: Consonants (1 of 2)

b <sup>1</sup>	c <sup>3</sup>	d <sup>1</sup>	f <sup>2</sup>	g <sup>2</sup>	h <sup>1*</sup>
j <sup>1</sup>	k <sup>1*</sup>	l <sup>1</sup>	m <sup>1</sup>	n <sup>2</sup>	p <sup>1*</sup>
qu <sup>1</sup>	r <sup>1</sup>	s <sup>4</sup>	t <sup>3</sup>	v <sup>1</sup>	w <sup>1*</sup>
x <sup>3**</sup>	y <sup>1**</sup> as a consonant	z <sup>2</sup>	ch <sup>3</sup>	sh <sup>1</sup>	th <sup>2*</sup>
wh <sup>3</sup>	-ng <sup>1</sup>	bb <sup>1</sup>	dd <sup>1</sup>	ff <sup>1</sup>	gg <sup>1</sup>
ll <sup>1</sup>	mm <sup>1</sup>	nn <sup>1</sup>	pp <sup>1</sup>	rr <sup>1</sup>	ss <sup>2</sup>
tt <sup>1</sup>	zz <sup>1</sup>	-ck <sup>1</sup>	-tch <sup>1</sup>	-ed <sup>2</sup>	ph <sup>1</sup>



# Letter Tiles: Consonants (2 of 2)

-lf<sup>1</sup> gh<sup>2</sup> gu-<sup>1</sup> -ge<sup>1\*</sup> -dge<sup>1</sup> pn<sup>1</sup>

-le<sup>1</sup> kn-<sup>1</sup> -que<sup>1</sup> mn<sup>2</sup> mb<sup>1</sup> gn<sup>1</sup>

rh<sup>1</sup> wr<sup>1</sup> sc<sup>3</sup> si-<sup>3</sup> ssi<sup>1</sup> sci<sup>1</sup>

ci-<sup>2\*</sup> -ce<sup>1</sup> ps-<sup>1</sup> sch<sup>1</sup> shi<sup>1</sup> ti-<sup>3</sup>

-bt<sup>1</sup> -ve<sup>1</sup> i<sup>1\*\*</sup>  
as a  
consonant -se<sup>2</sup> -ze<sup>1</sup>





# Letter Tiles: Vowels (1 of 2)

a <sup>4</sup>	e <sup>3</sup>	i <sup>4</sup> as a vowel	o <sup>7</sup>	u <sup>5</sup>	y <sup>3</sup> as a vowel
----------------	----------------	------------------------------	----------------	----------------	------------------------------

a_e <sup>3</sup>	e_e <sup>1</sup>	i_e <sup>2</sup>	o_e <sup>1</sup>	u_e <sup>2</sup>	-ye <sup>1</sup>
------------------	------------------	------------------	------------------	------------------	------------------

ai <sup>3</sup>	ay <sup>1</sup>	aw <sup>1</sup>	au <sup>1</sup>	al <sup>1</sup>	aigh <sup>1</sup>
-----------------	-----------------	-----------------	-----------------	-----------------	-------------------

augh <sup>3**</sup>	ar <sup>3</sup>	are <sup>1</sup>	air <sup>1</sup>	ee <sup>1</sup>	ea <sup>3</sup>
---------------------	-----------------	------------------	------------------	-----------------	-----------------

ei <sup>2</sup>	ey <sup>2</sup>	eigh <sup>2</sup>	ew <sup>2**</sup>	er <sup>1</sup>	ear <sup>4</sup>
-----------------	-----------------	-------------------	-------------------	-----------------	------------------

eer <sup>1</sup>	ie <sup>3</sup>	igh <sup>1</sup>	ir <sup>1</sup>	ier <sup>1</sup>	oa <sup>1</sup>
------------------	-----------------	------------------	-----------------	------------------	-----------------

oe <sup>1</sup>	oo <sup>2</sup>	ou <sup>4</sup>	oul <sup>1</sup>	ough <sup>5**</sup>	ow <sup>2</sup>
-----------------	-----------------	-----------------	------------------	---------------------	-----------------



# Letter Tiles: Vowels (2 of 2)

oy<sup>1</sup>

oi<sup>1</sup>

or<sup>2</sup>

ore<sup>1</sup>

oor<sup>1</sup>

oar<sup>1</sup>

our<sup>2</sup>

ue<sup>1</sup>

ui<sup>1</sup>

-uy<sup>1</sup>

ur<sup>2</sup>

-ure<sup>1</sup>



# Blank Tiles

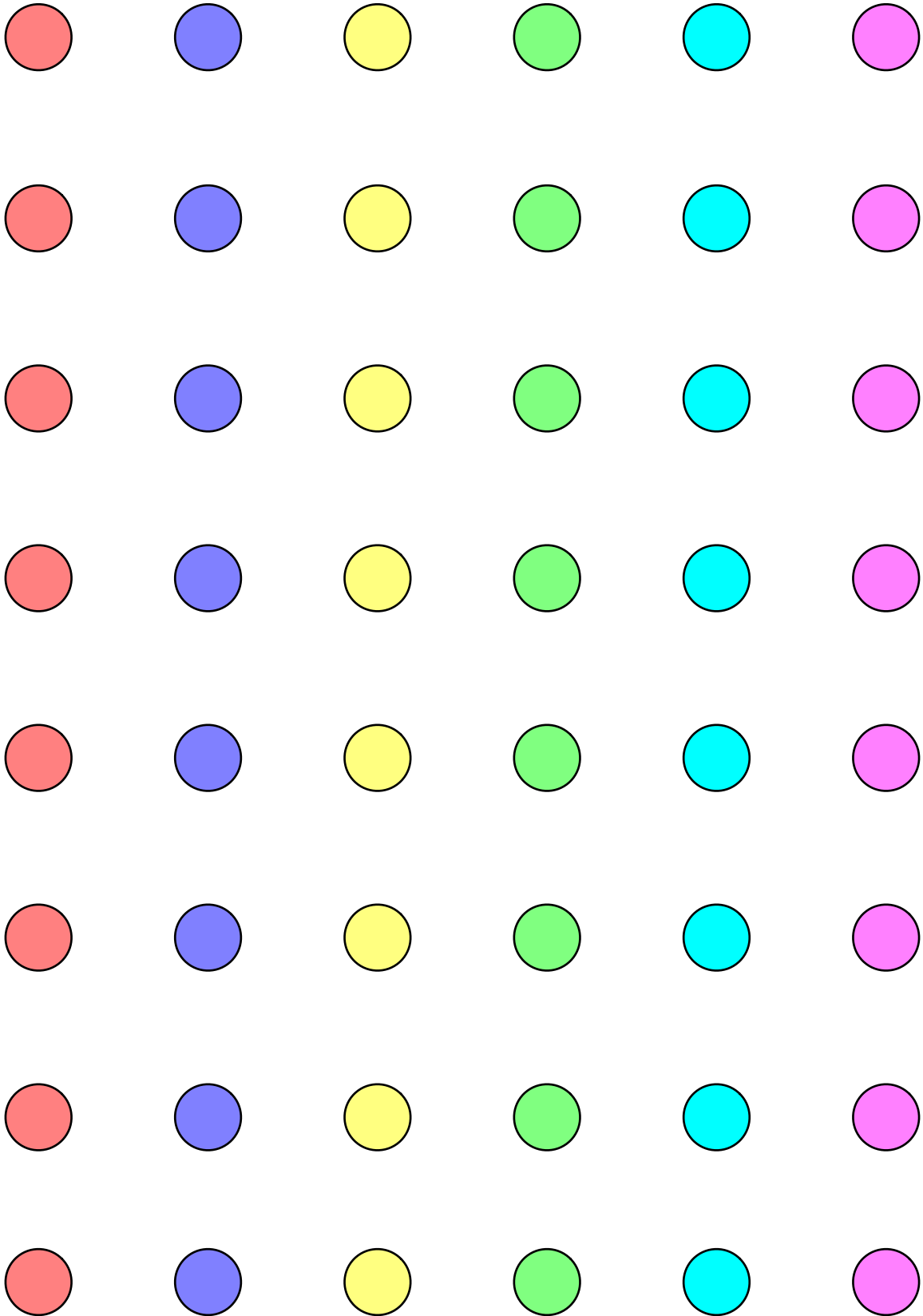
---






# Coloured Tokens

---



# Blank Space to Write

---



# Recording Progress



# Keeping a Record (each word)

## helicopter

	IND	W-GUI	JOINT	MODEL	NO
<b>Examine the word</b>	✓				
Listening / articulating the word		✓			
Dividing the word into syllables			✓		
Dividing into number of sounds		✓			
Isolating the beginning sound		✓			
Isolating the end sound		✓			
Matching sounds to phonemes				✓	
Full phoneme segmentation				✓	
Apply letters (invented spelling)					✓
Construct word					✓
Check against conventional spelling					✓
Brainstorm/explore meaning				✓	
Draft sentences			✓		





# Keeping a Record (each word)

\_\_\_\_\_

	IND	W-GUI	JOINT	MODEL	NO
<b>Examine the word</b>					
Listening / articulating the word					
Dividing the word into syllables					
Dividing into number of sounds					
Isolating the beginning sound					
Isolating the end sound					
Matching sounds to phonemes					
Full phoneme segmentation					
Apply letters (invented spelling)					
Construct word					
Check against conventional spelling					
Brainstorm/explore meaning					
Draft sentences					



# Keeping a Record (all words)

Word	Listening	Syllables	Beginning	End	# Sounds	Phonemes	Letters	Meaning	Sentences

**IND = independent    GUI = with guidance    JOINT = jointly    MOD = modelled    NO = not done**



# Developing a Student Profile

**Name:** \_\_\_\_\_ **Age:** \_\_\_\_\_

**School:** \_\_\_\_\_ **Grade:** \_\_\_\_\_

**Notes:** \_\_\_\_\_

**NSW Literacy Continuum**

Print Concepts  Speaking  **Chall's Literacy Stage**

Phonemic Awareness  Vocabulary  **Fountas & Pinnell**

Phonics  Writing  **Words Their Way (Spelling)**

Reading/Fluency  Comprehension  **Emergent / Alphabetic / Within Word**

**Progressive ELL Stages** **Words Their Way (Spelling)**

Silent / Early Production / Productive / *Early / Middle / Late*

Intermediate Fluency / Advanced Fluency *Emergent / Alphabetic / Within Word*

**EAL/D Progression** **Numeracy Continuum**

Reading & Responding	Oral Interaction	Writing	Aspects
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1 2 3 4 5 6 7
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Other Areas of Possible Assessment Data**

<b>Oral Language</b> <i>(tests, results &amp; comments)</i>	<b>Cognitive Development</b> <i>(tests, results &amp; comments)</i>	
<b>Concepts of Print</b> <i>(tests, results &amp; comments)</i>	<b>Phonics/Spelling</b> <i>(tests, results &amp; comments)</i>	<b>Sight Words/High Frequency</b> <i>(tests, results &amp; comments)</i>
<b>Fluency Observations</b> <i>(tests, results &amp; comments)</i>		
Date: Results/Observation:	Date: Results/Observation:	Date: Results/Observation:
<b>Vocabulary</b> <i>(tests, results &amp; comments)</i>	<b>Writing</b> <i>(tests, results &amp; comments)</i>	<b>Numeracy</b> <i>(tests, results &amp; comments)</i>
<b>Motivation/Self-Concept</b> <i>(tests, results &amp; comments)</i>		
<b>Quality of Instruction/Language Interaction</b> <i>(tests, results &amp; comments)</i>		
<b>Quality of Learning Environments</b> <i>(tests, results &amp; comments)</i>		

<b>Accomplished</b>	<b>Currently Developing</b>	<b>Age/Grade Expectations</b>
<b>Goals and Action Plan</b>		



# Planning/Progress Sheet

**Session Planning and/or Record Keeping**

Session #	Date	Description / Observations	Skill(s) / Task(s)
7			
8			
9			
10			
11			
12			

**Summary of achievements and next steps:**

**Session Planning and/or Record Keeping**

**Big picture goal or question being pursued in the learning:**

Session #	Date	Description / Observations	Skill(s) / Task(s)
1			
2			
3			
4			
5			
6			



# Lesson Planning

DATE: _____ TIME: _____ DURATION: _____ LOCATION: _____ STUDENT(S): _____ CONTENT AREA(S): _____ SKILL(S): _____		
OBJECTIVES/GOALS	KEY ACTIVITIES	
REQUIRED MATERIALS		
8	1	TEACHER'S ACTIONS
7	2	STUDENT'S ACTIONS
6	3	
5	4	
OUTCOMES		
COMMENTS/OBSERVATION/REFLECTION		
FOCUS OF PREVIOUS LESSON		FOCUS FOR NEXT LESSON

**PLANNING SHEET**      Teacher/Class/Student: \_\_\_\_\_ Dates/Term: \_\_\_\_\_

My Teaching Practice Does Include or Should Include:

---

---

---

---

---

---

---

---

---

---

Because:

---

---

---

---

---

---

---

---

---

---

Element	Content & Activities	Expectations

Teaching and Learning Goals/Objectives Are:

---

---

---

---

---

---

---

---

---

---



**Texts/Materials Required**

Tutor/Teacher: \_\_\_\_\_ Tuttee(s)/Student(s): \_\_\_\_\_  
 Date: \_\_\_\_\_  
 Duration (e.g. 45 minutes): \_\_\_\_\_  
 Session/Cycle: \_\_\_\_\_

**Procedure for the Session's Activities**

- Literacy Focus for the Lesson** (choose no more than three to four areas per session)
- Phonemic awareness
  - Print awareness
  - Word/phonics study
  - Sight word (fluency) practice
  - Developing vocabulary
  - Composing sentences
  - Reading (practice)
  - Asking/answering questions
  - Visualising
  - Predicting/infering
  - Making connections (to concepts)
  - Summarising/determining important ideas
  - Responding to a text
  - Considering a model for a writing task
  - Planning/prewriting
  - Organising writing & drafting
  - Revising (for content and for correctness)
  - Exploring background knowledge
  - Discussing, debating and critiquing
  - Other: \_\_\_\_\_

**How do you know if student(s) are meeting session and term objectives?**

**Session Goals/Objectives:** (no more than two to three)

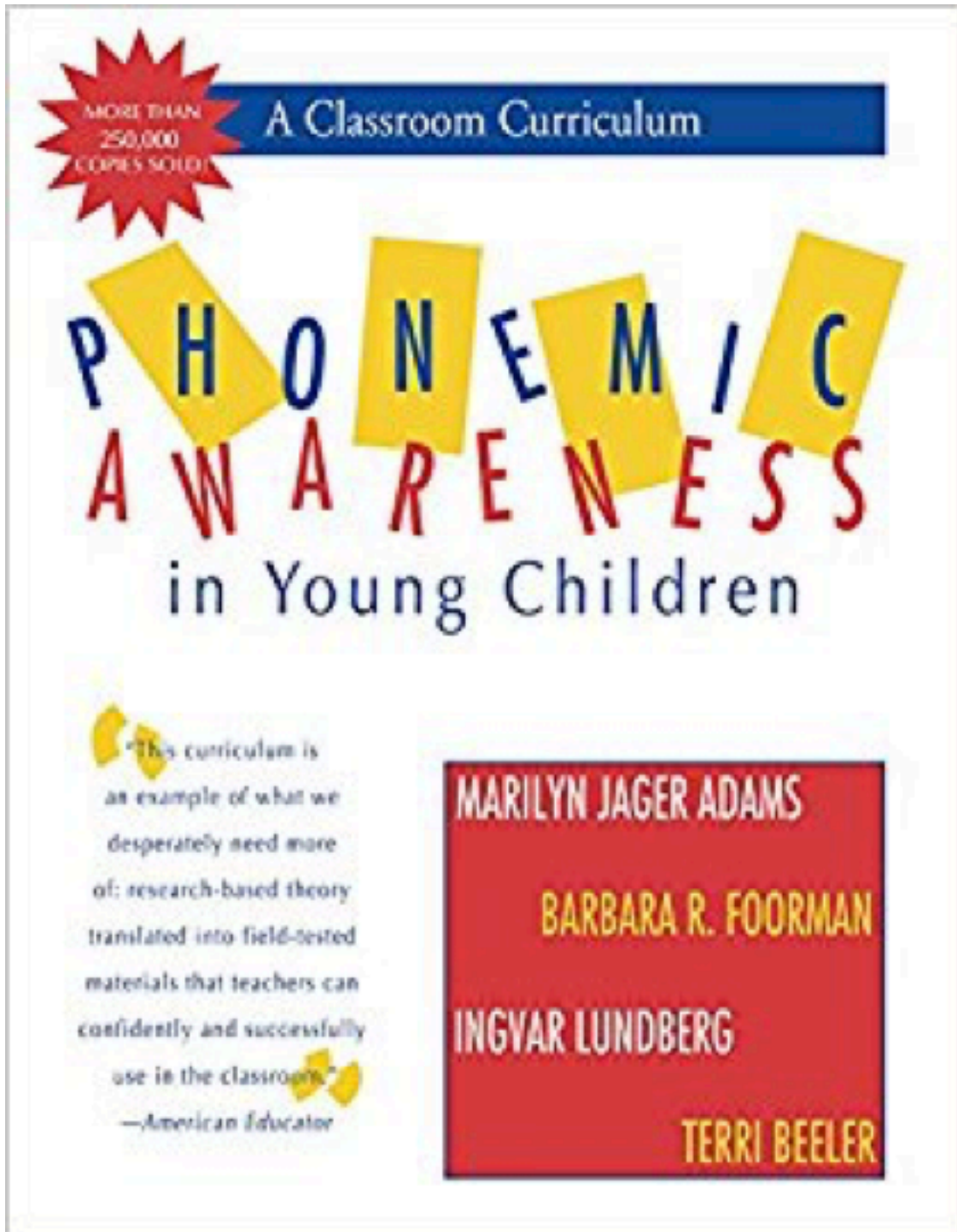
**ON BACK:** Write your **post-session reflection**



# Additional Resources





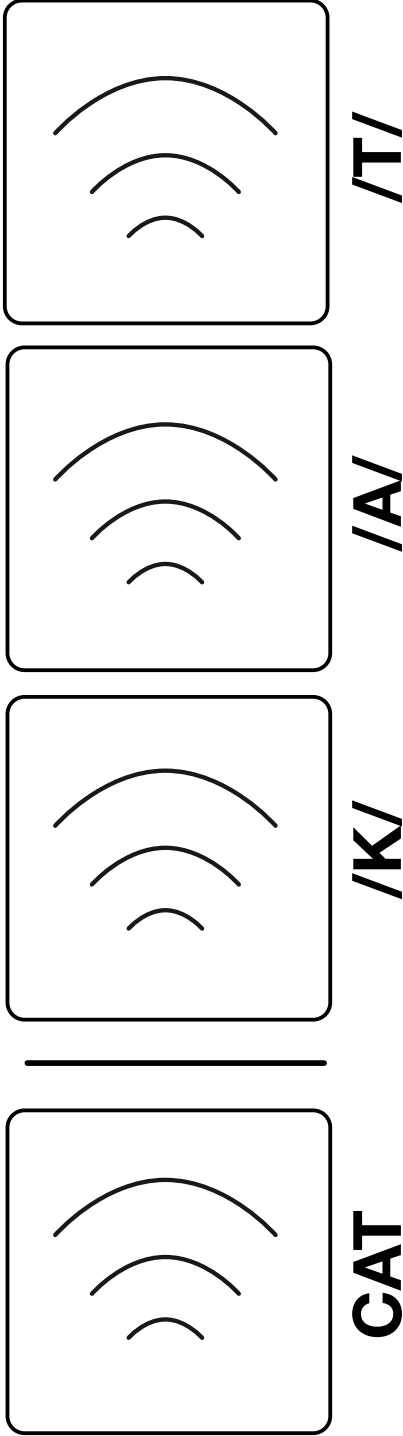


Adams, M. J., Foorman, B. R., Lunberg, I., & Beeler, T. (1988). Phonemic awareness in young children: a classroom curriculum. Baltimore: Paul H. Brookes Publishing Company.



## The Crux of Phonemic Awareness

To be able to detect the sounds within words, and hold this in working memory long enough as to begin matching sounds to graphemes.



*The Seven Steps to Phonemic Awareness Are*

- Listening
- Detecting rhyme
- Isolating words in sentences
- Awareness of syllables
- Detecting initial and final sounds
- Isolating individual phonemes
- Introducing letters and spelling

**Please note:** phonemic knowledge is the exact knowledge of the 45 possible phonemes (give or take one to two). In addition, the development of oral language skills, including vocabulary skills is an inherent precursor.

### PA MILESTONES (Ages when 80-90% of typical students achieved a phonological skill. <http://www.readingrockets.org/article/development-phonological-skills>)

- Awareness of rhyme emerges = 24 - 30 mths
- Ability to produce rhyme emerges = 30 - 36 mths
- Rote imitation and enjoyment of rhyme and alliteration = 4 yrs old
- Rhyme recognition, odd word out = 5 yrs old
- Recognition of phonemic changes in words = 5 yrs old
- Clapping, counting syllables = 5 yrs old
- Ability to segment words into phonemes begins = 5 - 7 yrs old
- Noticing & remembering separate phonemes in a series = 5.5 yrs old
- Blending onset and rime = 5.5 yrs old
- Producing a rhyme = 5.5 yrs old
- Matching initial sounds; isolating an initial sound = 5.5 yrs old
- Compound word deletion = 6 yrs old
- Syllable deletion = 6 yrs old
- Blending of two and three phonemes = 6 yrs old
- Segment words w/ 2-3 phonemes (no blends) = 6 yrs old
- Segment words w/ 3-4 phonemes (w/ blends) = 6.5 yrs old
- Substitute phoneme in words (no blends) = 6.5 yrs old
- Sound deletion (initial and final positions) = 7 yrs old
- Sound deletion (initial position, include blends) = 8 yrs old
- Sound deletion (medial & final blend positions) = 9 yrs old

Refer to Vocabulary/Language Development for a child's development of familiar words which will be available for analysis.



# Phoneme Map

<b>/b/</b> (97% of time spelled w/ "b") bed bunny Bhuban except: b in numb is /n/ mb in numb is /m/	<b>/ch/</b> (55% of time spelled w/ "ch") chair, catch, future -ch is used only after a single vowel that does not say its name except: ch in chef is /ʃ/ ch in chord is /k/	<b>/d/</b> (88% of time spelled w/ "d") dog daddy moved except: -ed in jumped is /t/	<b>/f/</b> (79% of time spelled w/ "f") food, stuff phone, catfish laugh -gh is often silent in vowel constructs like eight, laugh, ough, except for occasions like laugh or tough	<b>/g/</b> (88% of time spelled w/ "g") game giggle ghost guide G softens to /j/ when followed by E, I or Y. Otherwise, G says /g/	<b>/h/</b> (98% of time spelled w/ "h") hot whole the letter "h" is often silent in such a phonogram as "gh" or is part of another phonogram like "th" or when "wh" makes the /hw/ sound.	<b>/j/</b> (88% of time spelled w/ "g") jar giraffe cage ludge G softens to /j/ when followed by E, I or Y. Otherwise, G says /g/	<b>/k/</b> (73% of time spelled w/ "c") cake, kite, back, cat chord, cheque C softens to /s/ when followed by E, I or Y. Otherwise, C says /k/ -ck is used only after a single vowel that says its short sound	<b>//</b> (91% of time spelled w/ "r") lion chord, fall lille except: if in car is /r/	<b>/m/</b> (94% of time spelled w/ "m") man summer autumn comb
<b>/n/</b> (97% of time spelled w/ "n") no funny knot grand puppies mnemonic	<b>/ng/</b> (41% of time spelled w/ "n") sing singing think	<b>/p/</b> (96% of time spelled w/ "p") pie happy "p" appear as a silent letter in the relatively rare phonograms "ps" "pt" and "pr"	<b>/kw/</b> (100% of time spelled w/ "qu") quick except: -que in cheque is /k/	<b>/r/</b> (97% of time spelled w/ "r") run hurry rhyme write	<b>/s/</b> (73% of time spelled w/ "s") sun, messy house, advice psychiatry, ceiling rice C softens to /z/ when followed by E, I or Y. Otherwise, C says /s/	<b>/sh/</b> (28% of time spelled w/ "sh") shoe, chef sugar, conscience, pension, fashion, pressure, mission, seizure, beige, regime, delegate -vu initials, schritzel, fascism	<b>/zh/</b> (48% of time spelled w/ "s") confusion, casual, equation, seizure, beige, regime, deja -vu	<b>/t/</b> (97% of time spelled w/ "t") tea lille jumped pterodactyl doubt except: -ed in moved is /d/	<b>/th/</b> (100% of time spelled w/ "th") the this that thumb th in thyme is /t/
<b>/v/</b> (99.5% spelled w/ "v" or "ve") van have of - (irregular)	<b>/w/</b> (92% of time spelled w/ "w") water whale "w" is a silent in the word "write"	<b>/hw/</b> (100% of time spelled w/ "wh") while except: wh in whole is /v/ wh in whale is /w/	<b>/wəl/</b> one once won wonderful In "one" the /w/ sound is not respelled. In "wonderful" the /w/ is an irregular phoneme.	<b>/ks/</b> (100% of time spelled w/ "x") fox except -x in xylophone is /z/	<b>/y/</b> (42% of time spelled w/ "y") yellow onion "y" often serves a vowel and makes the short /i, long /i, long e and long a sounds.	<b>/z/</b> (23% of time spelled w/ "z") zoo luzzy snooze is choose xylophone	<b>/ā</b> (45% of time spelled w/ "a") paper, ace rain, straight day, steak, eight vein, they a vowel says its name (long form) at the end of a syllable as in paper.	<b>/ā</b> (45% of time spelled w/ "a") paper, ace rain, straight day, steak, eight vein, they a vowel says its name (long form) at the end of a syllable as in paper.	<b>e</b> (91% of time spelled w/ "e") bed leaf field said (irregular)
<b>/ə/</b> (70% of time spelled w/ "e") tree, she meat, eve, receive, key variation, patie cher, lunny a vowel says its name (long form) at the end of a syllable as in she.	<b>/i</b> (86% of time spelled w/ "i") bite, bicycle pie, high felix, height boy, my a vowel says its name (long form) at the end of a syllable as in she.	<b>/i</b> (87% of time spelled w/ "i, e") bite, bicycle pie, high felix, height boy, my a vowel says its name (long form) at the end of a syllable as in she.	<b>o</b> dog the short o sound is quite similar to the /aw/ sound in law or father	<b>/o</b> (73% of time spelled w/ "o") veto, most bone, boat too, soon grow, tough, bureau a vowel says its name (long form) at the end of a syllable as in veto.	<b>u</b> (86% of time spelled w/ "u") bug touch	<b>ū</b> (89% of time spelled w/ "u") pupil, tune, few, beauty a vowel says its name (long form) at the end of a syllable as in pupil. the /ong /u/ sound is quite similar to the /aw/ sound in soon or do.	<b>ā</b> (96% of time spelled w/ "a") cat laugh ache (rare) plate (rare) except: ai is normally /ong a/ as in paid	<b>ā</b> (45% of time spelled w/ "a") paper, ace rain, straight day, steak, eight vein, they a vowel says its name (long form) at the end of a syllable as in paper.	<b>/ow/</b> (56% of time spelled w/ "ou") cow out drought
<b>/oy/</b> (62% of time spelled w/ "oi") boy soil	<b>/aw/</b> (40% of time spelled w/ "er") father law walk fraud on rough the /aw/ sound is quite similar to the /short o/ sound in dog	<b>/er/</b> (40% of time spelled w/ "er") father learn dollar girl, work syrup	<b>/or/</b> for more soar four	<b>/ar/</b> (88% of time spelled w/ "ar") car, heart	<b>/air/</b> chair here there april tear error	<b>oo</b> (91% of time spelled w/ "oo") cook put would woman except: ai is normally /ong a/ as in paid	<b>oo</b> (96% of time spelled w/ "a") cat laugh ache (rare) plate (rare) except: ai is normally /ong a/ as in paid	<b>oo</b> (98% of time spelled w/ "oo") soon, do blue, soup through, super flute, safe, new the /ong oo/ sound is quite similar to the /ong /u/ sound in few or tune	<b>schwa -ə (i)</b> not really a single sound. It is more like an /ah/ or /eh/ breathy sound. pencil
<b>/oy/</b> (62% of time spelled w/ "oi") boy soil	<b>/aw/</b> (40% of time spelled w/ "er") father law walk fraud on rough the /aw/ sound is quite similar to the /short o/ sound in dog	<b>/er/</b> (40% of time spelled w/ "er") father learn dollar girl, work syrup	<b>/or/</b> for more soar four	<b>/ar/</b> (88% of time spelled w/ "ar") car, heart	<b>/air/</b> chair here there april tear error	<b>oo</b> (91% of time spelled w/ "oo") cook put would woman except: ai is normally /ong a/ as in paid	<b>oo</b> (96% of time spelled w/ "a") cat laugh ache (rare) plate (rare) except: ai is normally /ong a/ as in paid	<b>oo</b> (98% of time spelled w/ "oo") soon, do blue, soup through, super flute, safe, new the /ong oo/ sound is quite similar to the /ong /u/ sound in few or tune	<b>schwa -ə (e)</b> not really a single sound. It is more like an /ah/ or /eh/ breathy sound. jacket
<b>/oy/</b> (62% of time spelled w/ "oi") boy soil	<b>/aw/</b> (40% of time spelled w/ "er") father law walk fraud on rough the /aw/ sound is quite similar to the /short o/ sound in dog	<b>/er/</b> (40% of time spelled w/ "er") father learn dollar girl, work syrup	<b>/or/</b> for more soar four	<b>/ar/</b> (88% of time spelled w/ "ar") car, heart	<b>/air/</b> chair here there april tear error	<b>oo</b> (91% of time spelled w/ "oo") cook put would woman except: ai is normally /ong a/ as in paid	<b>oo</b> (96% of time spelled w/ "a") cat laugh ache (rare) plate (rare) except: ai is normally /ong a/ as in paid	<b>oo</b> (98% of time spelled w/ "oo") soon, do blue, soup through, super flute, safe, new the /ong oo/ sound is quite similar to the /ong /u/ sound in few or tune	<b>schwa -ə (a, o, u)</b> (24% of time spelled w/ "a") not really a single sound. It is more like an /uh/ or /eh/ breathy sound. alone gallop circus





## Consonant Patterns

Phoneme	Most likely grapheme	%
/th/	<b>“th”</b> (nb: voiced & unvoiced forms)	100%
/hw/	<b>“wh”</b> as in while (must discriminate from /w/)	100%
/ks/	<b>“x”</b> (but “x” can also make the /z/ sound)	100%
/kw/	<b>“q”</b> (but “qu” make the /k/ sound rarely)	100%
/v/	<b>“v”</b> (except in “of” when the “f” makes the /v/ sound)	99.5%
/d/	<b>“d”</b> (must discriminate from /b/)	98%
/h/	<b>“h”</b> (but the letter appears in many phonics patterns)	98%
/b/	<b>“b”</b> (must discriminate from /d/ and /p/)	97%
/n/	<b>“n”</b> (must discriminate from /m/ and /ng/)	97%
/r/	<b>“r”</b> (common words make the /r/ with “wr” or “rh”)	97%
/t/	<b>“t”</b> (even though the “t” can make the “ch” sound)	97%
/p/	<b>“p”</b> (must discriminate from /d/ and /b/)	96%

Phoneme	Most likely grapheme	%
/m/	<b>“m”</b> (must discriminate from /n/ and /ng/)	94%
/w/	<b>“w”</b> (must discriminate from /hw/)	92%
/l/	<b>“l”</b> (but also spelled will “ll”)	91%
/g/	<b>“g”</b> (but also spelled will “gh” and “g” also make /j/ sound)	88%
/f/	<b>“f”</b> (but also spelled will “gh” and “ph”)	78%
/k/	<b>“c”</b> (but the “c” also makes the /s/ sound)	73%
/s/	<b>“s”</b> (but /s/ is made by “c” 17% of the time)	73%
/j/	<b>“g”</b> (even though the letter “j” is /j/ 100% of the time)	66%
/z/	<b>“s”</b> (even though the /z/ sound is associated with “z”)	64%
/ng/	<b>“ng”</b> (even though “n” is /ng/ in “think”)	59%
/y/	<b>“i”</b> (which is probably the biggest surprise on the list)	55%
/ch/	<b>“ch”</b> (even though “t” can also make the /ch/ sound)	55%
/sh/	<b>“ti”</b> (is most common, though “sh” is quickest association)	53%
/zh/	<b>“si”</b> (even though represented in other ways)	49%



## Vowel Patterns

Phoneme	Most likely grapheme	%
/short a/	“a” (as in cat ... with regular CVC pattern predictability)	96%
/short e/	“e” (as in pen ... with regular CVC pattern predictability)	91%
/aw/	“a” (as in father ... with more diversity than short vowels)	89%
/short u/	“u” (as in dug ... with regular CVC pattern predictability)	86%
/short o/	“o” (as in dog ... with regular CVC pattern predictability)	79%
/long o/	“o” (long vowels could be spelled with more diversity)	73%
/long e/	“e” (long vowels could be spelled with more diversity)	70%
/long u/	“u” (long vowels could be spelled with more diversity)	69%
/short i/	“i” (the /short i/ can also be spelled with “y” as in “myth”)	66%
/oi/	“oi” as in “boil” with “oy” as in “boy” making another 32%	62%
/ow/	“ou” as in “loud” with “ow” as in “cow” making 29%	56%
/short oo/	“u” as in “put” as well as “oo” in look at 31%	54%

Phoneme	Most likely grapheme	%
/long a/	“a” (and a_e at 35% as in “cake”)	45%
/long oo/	“oo” as in boot, represented by u, o, ou, u_e, ew, ue	38%
/long i/	“i_e” as in fire and “i” as in find, also by ie, y, igh	37%
schwa	equally represented by the vowels a, e, i, o, u	—%
/er/	not stated in research study	—%
/ar/	not stated in research study	—%
/air/	not stated in research study	—%
/ear/	not stated in research study	—%
/yur/	not stated in research study	—%

The percentages provided are based on the number of times each sound-spelling appeared in the 17,000 most frequently used words (Hanna et al., 1966). These included multisyllabic words.

Hanna, P. R., R. E. Hodges, J. L. Hanna, and E. H. Rudolph. 1966. Phoneme-Grapheme Correspondences as Cues to Spelling Improvement. Washington, DC: U.S. Office of Education.





# Onset-Rime Map

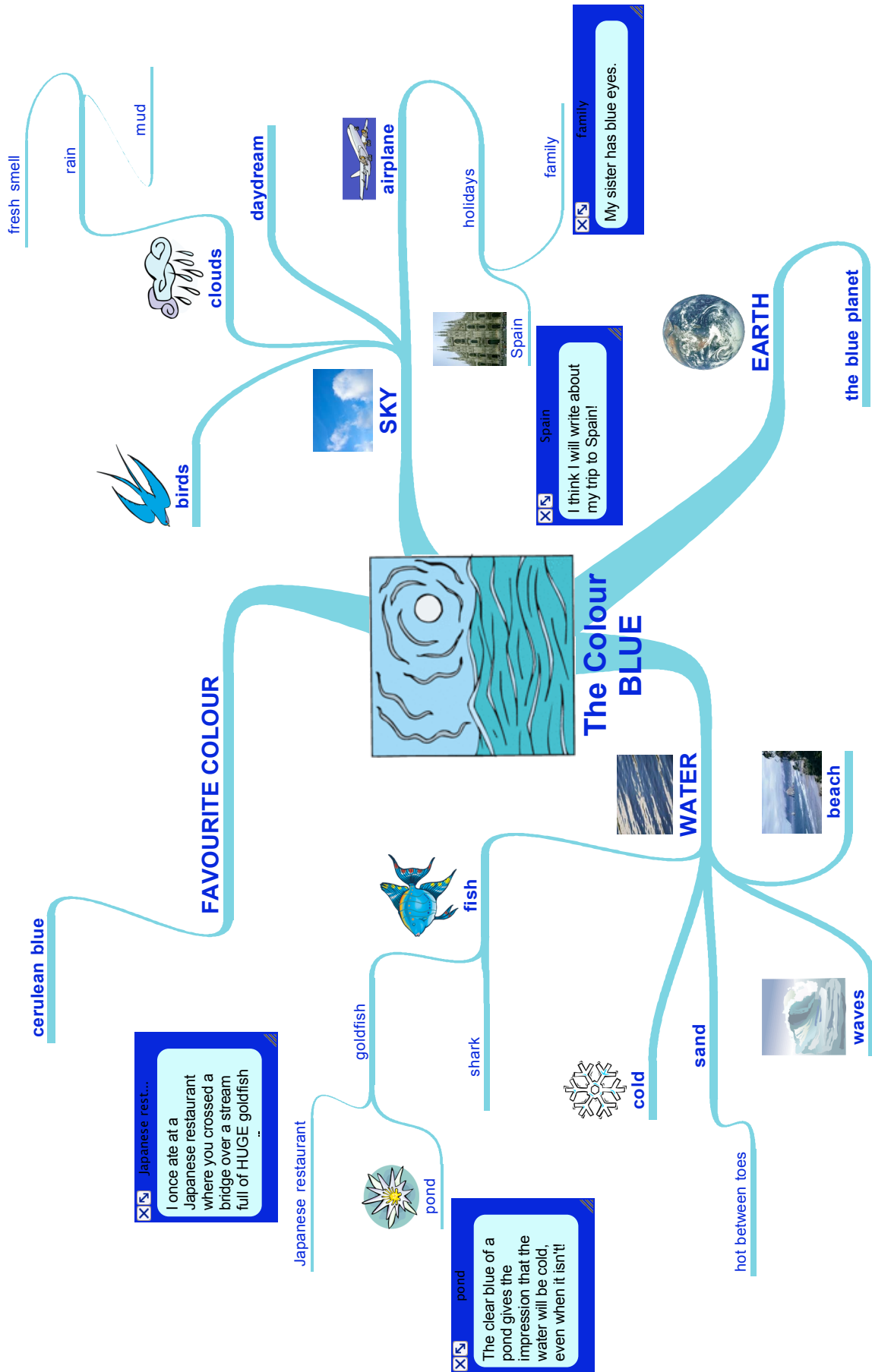
<p><b>f</b> 1 f is /f/ in fun ff is /f/ in muff (this is irregular) ff is /f/ as in coffee ff is /f/ as in stuff ff is /f/ as in laugh</p>	<p><b>d</b> 1 d is /d/ as in dog dd is /d/ as in daddy -ed is /d/ as in moved -ed is /d/ as in jumped</p>	<p><b>c</b> 2 c is /tʃ/ in cat c is /s/ in cheer or bicycle C softens to /j/ when followed by e, i or y. Otherwise, C says /k/. c is /s/ in scare</p>	<p><b>b</b> 1 b is /b/ as in bubble bb is /b/ as in bubble bb is /b/ as in ribbon (monosyllable) mb is /m/ in thumb</p>	<p><b>h</b> 1 h is /h/ in hot wh is /h/ in whole h is often combined in a number of consonant sounds, as in a silent letter as in ghost - or - in a phrasal laugh.</p>	<p><b>m</b> 1 m is /m/ in milk mm is /m/ in summer -mm is /m/ in autumn m is always /m/ except in the rare mm-ss /m/ in marmoset</p>	<p><b>qu-</b> 1 qu- is /kw/ as in quick whereas, -que is /k/ as in cheque qu- is always accompanied by the letter 'u' or 'u' in a vowel in a word in this case.</p>	<p><b>v</b> 1 v is /v/ in vein -ve is /v/ in have fv is /f/ in of (this is irregular) English words do not end in 'v', which is why there is the 've' there.</p>	<p><b>z</b> 1 z is /z/ in zoo zz is /z/ in buzz -zz is /z/ in buzz z is /z/ in zephyrene -ze is /z/ in choose</p>
<p><b>k</b> 1 k is /k/ in kite -ck is /k/ in back k is silent in know, knight, e ch &amp; que can also make the /k/ sound</p>	<p><b>j</b> 1 j is only /j/ as in jar yet for e, ch, sh, can also make the /j/ sound G softens to /j/ when followed by e, i or y. Otherwise, G says /g/. English words don't end in j.</p>	<p><b>n</b> 2 n is /n/ in now n is /ŋ/ in think nn is /n/ in sunny kn is /n/ in know pn is /n/ in pneumonia -nn is /m/ in autumn egg /ŋ/ in wing</p>	<p><b>p</b> 1 pp is /p/ in puppy ph is /f/ in phone p is silent in -ps-, -pt-, and -po-</p>	<p><b>t</b> 2 t is /t/ in talk t is /ʃ/ in future -th is /θ/ in tooth tt is /t/ in little tt is /ʃ/ in nation tt is /tʃ/ in potato tt is /t/ in potato (colloquial)</p>	<p><b>s</b> 3 s is /s/ in snake ss is /s/ in case ss is /ʃ/ in is ss is /ʃ/ in sister -ss is /s/ in nose -ss is /ʃ/ in mossy -ss is /ʃ/ in pressure -ss is /z/ in choose -ce -are /s/ in cease &amp; peace</p>	<p><b>y</b> 1 (as a consonant) y is /j/ as in yellow where a consonant, also makes the /j/ sound in motion y often appears in vowel sounds, which appear on a separate card</p>	<p><b>th</b> 2 th is /θ/ in this, that, the th is also /θ/ in pressure th is /ð/ in this, that, the th is /ð/ in together there are vowels/unvowelled forms of /θ/</p>	
<p><b>-at</b> /ǎ/ + /t/ words: bat, cat, mat, great non-words: hat, fat, rat</p>	<p><b>-ail</b> /ǎ/ + /l/ words: quail, rail, pall, nail non-words: call, zail</p>	<p><b>-ale</b> /ǎ/ + /l/ words: bale, pale, kale, sale non-words: zale, quale</p>	<p><b>-ain</b> /ǎ/ + /n/ words: pain, rain, train, stain non-words: yain, quain</p>	<p><b>-ane</b> /ǎ/ + /n/ words: pane, cane, pane, rain non-words: zane, yain, quain</p>	<p><b>-an</b> /ǎ/ + /n/ words: pan, can, fan, pan, ran non-words: zain, yain, quain</p>	<p><b>-ake</b> /ǎ/ + /k/ words: hake, cake, take, lake non-words: make, yake</p>	<p><b>-ack</b> /ǎ/ + /k/ words: back, tack, rack, sack, non-words: lack, yak,</p>	
<p><b>-aw</b> /ɑw/ words: saw, law, paw, claw non-words: yaw, yaw, fur</p>	<p><b>-ag</b> /ǎ/ + /g/ words: bag, lag, tag, wag non-words: zag, quag, yag</p>	<p><b>-ank</b> /ǎ/ + /n/ + /k/ words: bank, hank, tank non-words: zank, yank, quank</p>	<p><b>-ash</b> /ǎ/ + /ʃ/ words: ash, wash, trash, wash, yash non-words: zash, yash, quash</p>	<p><b>-ape</b> /ǎ/ + /p/ words: ape, orange, shape, tape non-words: zape, yape, quape</p>	<p><b>-ap</b> /ǎ/ + /p/ words: cap, nap, soap, tap, non-words: zap, yap, quap</p>	<p><b>-ame</b> /ǎ/ + /m/ words: name, game, fame, lame non-words: zame, yame, quame</p>	<p><b>-ate</b> /ǎ/ + /t/ words: date, late, fate, create non-words: zate, yate, quate</p>	
<p><b>-ick</b> /ɪ/ + /k/ words: lick, tick, wick, quick non-words: zick, yick</p>	<p><b>-ill</b> /ɪ/ + /l/ words: bill, hill, will, quilt, till non-words: zill, yill</p>	<p><b>-en</b> /ɛ/ + /n/ words: hen, Ben, zen, den, pen non-words: len, yen, quen</p>	<p><b>-ed</b> /ɛ/ + /d/ words: bed, fed, Ted non-words: yed, ved</p>	<p><b>-ell</b> /ɛ/ + /l/ words: sell, ell, well, bell, yell non-words: zell, fell, nell</p>	<p><b>-est</b> /ɛ/ + /s/ + /t/ words: best, zest, west, nest non-words: best, yest</p>	<p><b>-ite</b> /ɪ/ + /t/ words: site, bite, like, quite non-words: zite, yite, quite</p>	<p><b>-eat</b> /ɛ/ + /t/ words: eat, wheat, neat, meat non-words: zeat, yeat, yuat</p>	
<p><b>-ine</b> /ɪ/ + /n/ words: mine, wine, line, dine non-words: zine, yine, quine</p>	<p><b>-in</b> /ɪ/ + /n/ words: win, pin, bin, non-words: zin, zin, min</p>	<p><b>-ig</b> /ɪ/ + /g/ words: big, dig, wig, vig non-words: zig, yig</p>	<p><b>-ip</b> /ɪ/ + /p/ words: sip, lip, flip, hip, zip non-words: yip</p>	<p><b>-oke</b> /ɔ/ + /m/ words: hoke, poke, yoke, woke non-words: zoke, yoke, quoke</p>	<p><b>-ight</b> /ɪ/ + /t/ words: light, slight, right, tight non-words: zight, yight</p>	<p><b>-ide</b> /ɪ/ + /d/ words: side, ride, hide, glide non-words: zide, yide, quide</p>	<p><b>-ice</b> /ɪ/ + /s/ words: mice, twice, like, nice non-words: zice, yice</p>	
<p><b>-oom</b> /ɔ/ + /m/ words: boom, boom, boom non-words: zoom, boom, boom</p>	<p><b>-oot</b> /ɔ/ + /t/ words: boot, suit, hat, suit, gut non-words: zoot, yoot, quoot</p>	<p><b>-ump</b> /ɪ/ + /m/ + /p/ words: jump, jump, stomp non-words: zump, yump</p>	<p><b>-op</b> /ɔ/ + /p/ words: pop, top, stop, hop non-words: zop, yop, quop</p>	<p><b>-ore</b> /ɔ/ + /r/ words: more, more, store non-words: zore, yore</p>	<p><b>-ock</b> /ɔ/ + /k/ words: sock, mack, rack, back non-words: zack, yack, quack</p>	<p><b>-op</b> /ɔ/ + /p/ words: pop, top, stop, hop non-words: zop, yop, quop</p>	<p><b>-ore</b> /ɔ/ + /r/ words: more, more, store non-words: zore, yore</p>	
<p><b>-oon</b> /ɔ/ + /m/ words: boom, boom, boom non-words: zoom, boom, boom</p>	<p><b>-oot</b> /ɔ/ + /t/ words: boot, suit, hat, suit, gut non-words: zoot, yoot, quoot</p>	<p><b>-ump</b> /ɪ/ + /m/ + /p/ words: jump, jump, stomp non-words: zump, yump</p>	<p><b>-op</b> /ɔ/ + /p/ words: pop, top, stop, hop non-words: zop, yop, quop</p>	<p><b>-ore</b> /ɔ/ + /r/ words: more, more, store non-words: zore, yore</p>	<p><b>-ock</b> /ɔ/ + /k/ words: sock, mack, rack, back non-words: zack, yack, quack</p>	<p><b>-op</b> /ɔ/ + /p/ words: pop, top, stop, hop non-words: zop, yop, quop</p>	<p><b>-ore</b> /ɔ/ + /r/ words: more, more, store non-words: zore, yore</p>	
<p><b>-un</b> /ʊ/ + /n/ words: fun, fun, sun, run non-words: zun, yun, qun</p>	<p><b>-ug</b> /ʊ/ + /g/ words: bug, bug, rug, tug non-words: zung, yung, vug</p>	<p><b>-ut</b> /ʊ/ + /t/ words: but, suit, hat, suit, gut non-words: zut, yut, quut</p>	<p><b>-ump</b> /ɪ/ + /m/ + /p/ words: jump, jump, stomp non-words: zump, yump</p>	<p><b>-op</b> /ɔ/ + /p/ words: pop, top, stop, hop non-words: zop, yop, quop</p>	<p><b>-ore</b> /ɔ/ + /r/ words: more, more, store non-words: zore, yore</p>	<p><b>-ock</b> /ɔ/ + /k/ words: sock, mack, rack, back non-words: zack, yack, quack</p>	<p><b>-op</b> /ɔ/ + /p/ words: pop, top, stop, hop non-words: zop, yop, quop</p>	



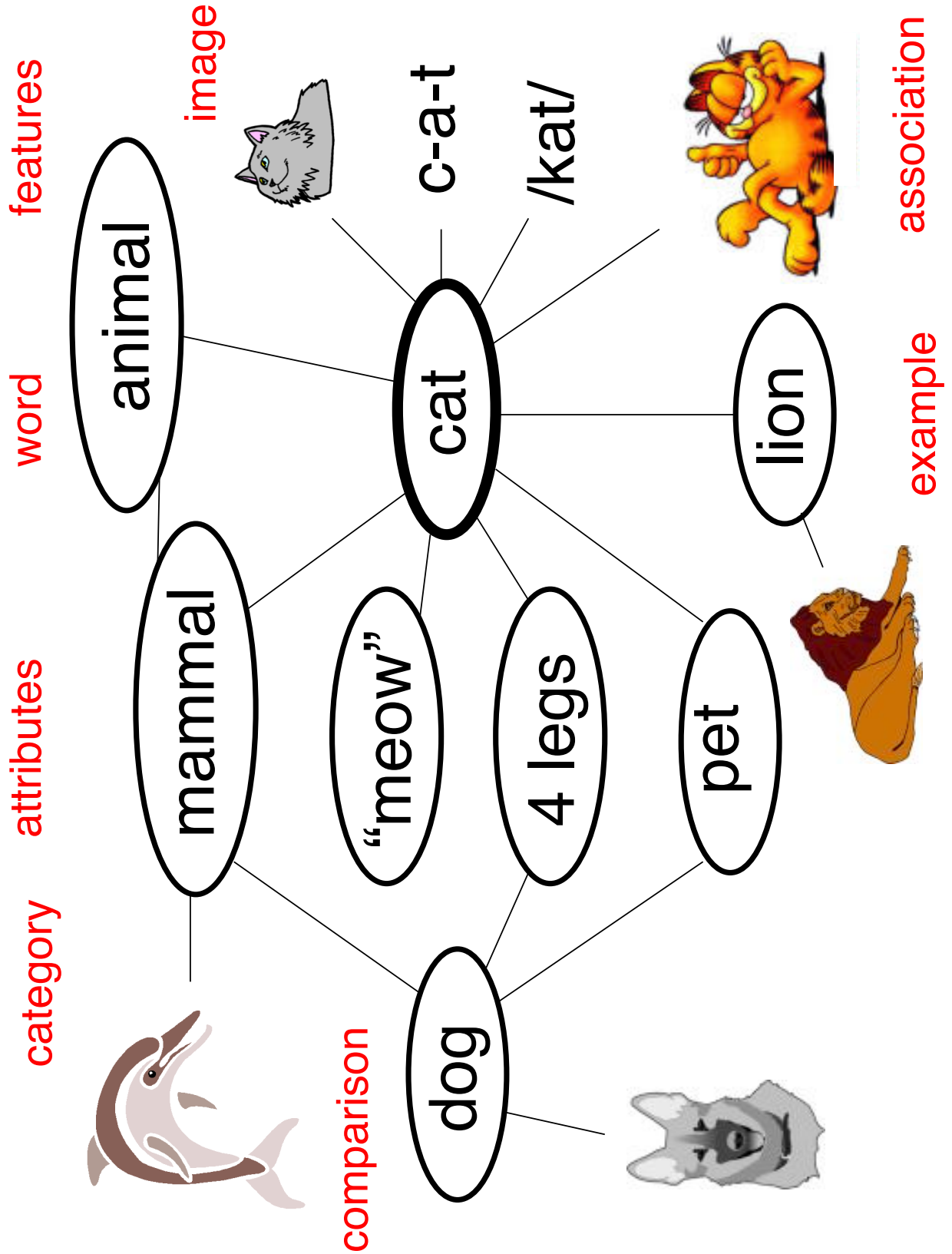
# Six Common Syllable Types

<b>Closed</b>	This syllable ends with a consonant and contains a single following, often in its short form	mat or pic-nic or fresh (e.g CVC or CCVC)
<b>Open</b>	This syllable type ends with a vowel and the vowel is often long	me or ve-to
<b>Silent e or vowel consonant e (ice)</b>	This syllable has a silent e at the end which often signals that the vowel will be long	cape or stripe or cue
<b>Vowel team or vowel pair</b>	This syllable type contains two vowels that make one sound.	pain or head or toy
<b>R-controlled vowel</b>	This syllable contains a vowel with the letter r, and the vowel is neither short nor long.	far or ferment or torment
<b>Consonant + le</b>	This syllable always appears at the end of words and the consonant always goes with the -le	apple or simple or fickle

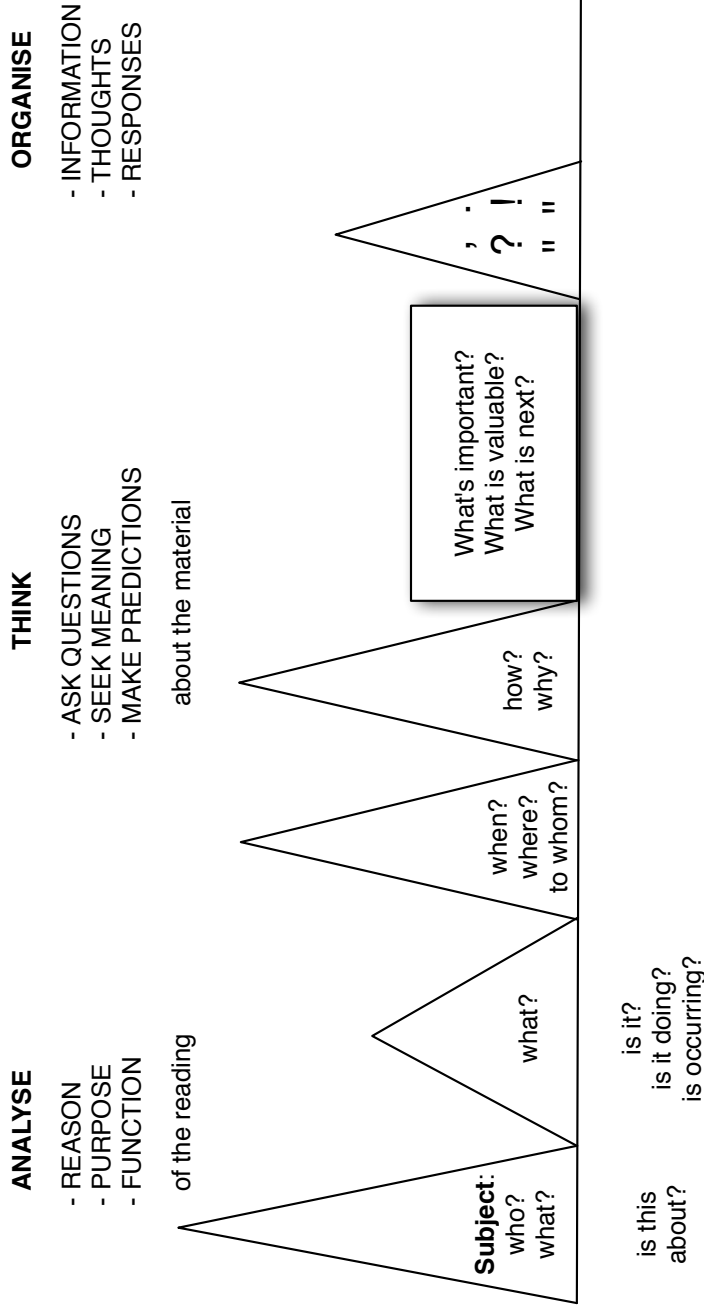




# Example Semantic Map (2 of 2)



# Sentence Cycle



The Prime Minister released a policy to the Parliament yesterday, because he wanted to address the problem of littering.

**You can switch the sentence order but you still ask similar questions**

Because he wanted to address the problem of littering, the Prime Minister yesterday released a policy to Parliament

