WORDS WITH SPELLING CONNECTIONS HAVE MEANING CONNECTIONS
PHONOLOGY + PHONICS + MORPHOLOGY + ETYMOLOGY = ORTHOGRAPHY
➔FOUR CONVERGING PATHS EN ROUTE TO AUTOMATIC WORD RECOGNITION AND SPELLING⬅

Nancy Cushen White, Ed.D.

WORDS WITH SPELLING CONNECTIONS HAVE MEANING CONNECTIONS

PHONOLOGY + PHONICS + MORPHOLOGY + ETYMOLOGY = ORTHOGRAPHY
➔FOUR CONVERGING PATHS EN ROUTE TO AUTOMATIC WORD RECOGNITION AND SPELLING⬅

**Everyone Reading Annual Conference
CUNY Graduate Center
New York City, NY**

Nancy Cushen White, Ed.D.
nancycushenwhite@gmail.com
Session T30

March 1, 2016

Richard Venezky—1999—page 4

"English orthography is <u>not</u> a failed phonetic transcription system, invented out of madness or perversity. Instead, it is a more complex system that <u>preserves bits of history</u> (i.e., etymology), <u>facilitates understanding</u>, and <u>also</u> translates into sound."

2

Bruner's Law

"We want kids to experience success and failure as <u>information</u>—<u>*not*</u> success or failure."

—Jerome Bruner

3

Orthography
Etymology + Morphology + Phonics + Phonology

◆ Etymology ➜ <u>interrelationhips</u> of words with their <u>own origins</u> and with <u>other</u> words that <u>share that origin</u>

◆ Morphology ➜ sequence and structure of <u>meaningful units</u>

◆ Phonology ➜ units of <u>speech</u> that create meaning when combined

4

Etymology

INTERRELATIONSHIPS

➢ Words with their origins
➢ Other words with the same origin

French ➔	coquette, antique, contour
Italian ➔	piano, Monticello
Yiddish ➔	chutzpah, schlock
Spanish ➔	mesa, taco
Greek ➔	polychrome, philosophy, psychic

5

A **BIG** Idea

❖ Words with spelling connections also have meaning connections.

❖ The meaning of a word is the sum of its parts:
◆ 80% of derived words mean what their parts suggest—IF multiple meanings of the base elements are taken into account.

❖ Students who understand language structure notice and use these links in meaning.

6

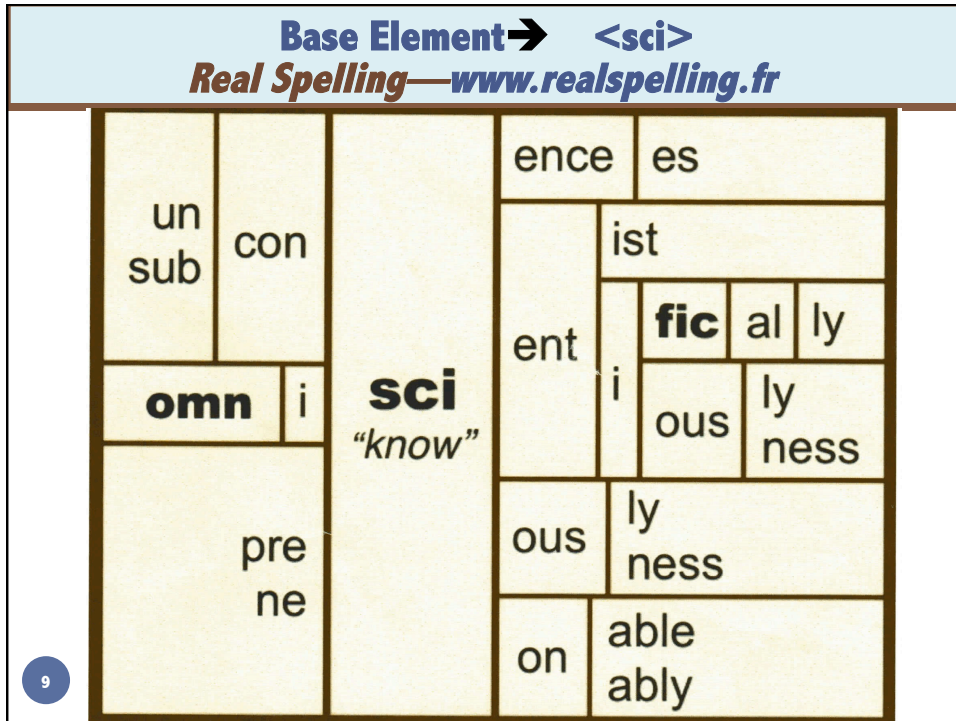| Morpheme ➔ ➔➔➔➔➔➔ smallest meaningful unit of language |
| --- |
| Count the morphemes in these words: |
| elephants |
| election |
| accommodation |
| interrelationship |
| photograph |
| idiosyncratic |
| beneficial |

Another BIG Idea
❖ Words with spelling connections also have meaning connections.
❖ We don't know the pronunciation of a base until it surfaces in a word.

Base Element➔ <sci>
Real Spelling—www.realspelling.fr

un
sub con

omn i

pre ne

sci
"know"

ence | es

ist

ent **fic** al ly
i ous ly
ness

ous ly
ness

on able
ably

9

Morphology

Morpheme➔smallest unit of meaning
> Linguistic Entity➔whole word➔part of a word➔single phoneme

*accept	except
elicit	illicit
affect	effect
*fiscal	physical
specific	pacific
conscious	conscience
*dentist	swiftest
hostess	famous

spectroheliograph➔*instrument for taking photographs of the sun in light of one wavelength only*

Roots—Base Elements—Stems

Roots

Roots ➔ Etymological or Morphological?

❖ Strictly <u>historical</u> term (diachronic)

❖ Currently used as <u>exclusively etymolo*gical*</u>

❖ <u>Etymological source</u> of the base element

11

Roots-Base Elements-Stems

EXAMPLES OF ROOTS

➤ The <u>root</u> of <ugly> is the Old Norse <uggligr> which means "to be feared.

➤ The <u>root</u> of <gregarious> is the Latin <gregem> which means "flock."

12

Another **BIG** Idea

❖ **Words with** <u>spelling connections</u> **also have** <u>meaning connections</u>.

❖ The meanings of specific words need to be taught in ways that support students in understanding how words are connected <u>semantically and morphologically</u> (Graves, Juel, & Graves, 2004).

13

Roots-Base Elements-Stems

Eponym ➔ a word derived from the <u>name</u> of a <u>person</u>

⊙*<u>sandwich</u>*➔The Earl of Sandwich *was a compulsive gambler—who did not want to stop gambling when he was hungry.*

⊙*<u>atlas</u>*➔Atlas *was a 2nd-generation Titan who personified the quality of endurance. He led the Titans in a rebellion against Zeus and was* condemned to bear the heavens upon his shoulders. *Illustrations on covers of early books of maps showed* Atlas *holding up the globe; today a book of maps is called an* atlas.

14

Roots-Base Elements-Stems

Toponym ➔ a word derived from the name of a place

⊙ The root of <fez> is <fez>. This word, meaning cylindrical red headgear with a tassel, is named after the Moroccan city of Fez.

⊙ Examples of Toponyms:
  ➢ <hamburger>
  ➢ <cologne>
  ➢ <fez>

15

Roots-Base Elements-Stems

Toponym ➔ a word derived from the name of a place

⊙ <la la land>

1. A place or a state of being out of touch with reality

2. A place known for frivolous activities.

The term <la-la land> is coined from the initials of the city of Los Angeles, home of Hollywood, alluding to the fictitious nature of the movies, sets, etc.

16

Roots-Base Elements-Stems

Base Element

❖ Essential *kernel* of a word's meaning

❖ Morphological base of a word

❖ No inherent historical reference

❖ Strictly structural connotation

❖ Spelling of a word as it is today

17

Roots-Base Elements-Stems

Base Element	Root
No inherent historical reference	Strictly historical etymological term
Morphological base of a word	Origin and history of a base
Essential *kernel* of a word's meaning	Meaning and form through time between a word and its origin
Spelling of a word as it is today	Diachronic—development through history
Strictly structural connotation	Historical

18

Roots-Base Elements-Stems

Base Elements

❑ **Free Bases** can function as single words independently.

| will | the | text | she | with | run | warm |

❑ **Bound Bases** are only words in combination with at least one other element.

| ject | rupt | chrone | phys | fer | tain | sci |

❑ **Twin Bases** have alternative forms.

scribe-script   tend-tense   duce-duct   flex-flect

○ Any or all **may** appear in the same word family.

❑ **Different** Bases derived from the same root:

same etymological family—different morphological family

face-fice-fact-fect➔to make   tain-tent-tine-tene➔to hold

Free Morphemes-Bases

❑ Can stand alone as words

❑ Do not have to be combined with other morphemes

❑ May be made up of one or more syllables

FUNCTION WORDS	CONTENT WORDS
▪ conjunctions	▪ nouns
▪ prepositions	▪ verbs
▪ pronouns	▪ adjectives
▪ helping verbs	▪ adverbs
▪ articles	

20

Function Words

❑ Have <u>little meaning</u> of their own

❑ Give information about the <u>function of lexical [content] words</u>

❑ Are the main concern of <u>grammar</u> books

❑ Are usually <u>unstressed (unaccented)</u>

FUNCTION WORDS

- conjunctions
- prepositions
- pronouns
- helping verbs
- articles

21

Content [Lexical] Words

❑ Have denotation, or specific meanings

❑ Can be defined in isolation

❑ Are the principal concern of dictionaries

❑ Are usually stressed [accented]

CONTENT-LEXICAL WORDS

- nouns
- verbs
- adjectives
- adverbs

22

Lexical [Content] Words
Must Have <u>At Least Three</u> Letters

odd	egg	err	ebb

When a lexical [content] word and a function word are homophones, <u>one more letter</u> is used to spell the lexical word.

in	for	by	to	or	but	be	we
inn	fore	bye	too	ore	butt	bee	wee
		buy		oar			

23

Lexical [Content] Words
Must Have <u>At Least Three</u> Letters

What about one-syllable words ending in the phoneme /ī/?
<cry>   <dry>   <try>   <sly>   <pry>   <shy>

◆ These words <u>can</u> be spelled with a <y> grapheme to represent their /ī/ phoneme because their spelling includes a consonant blend or consonant digraph thus providing the <u>3 letters required</u> for a lexical word.

<lie>   <die>   <vie>   <tie>

◆ These words can<u>not</u> be spelled with the single letter <y> grapheme to represent their /ī/ phoneme because they start with a single consonant grapheme **and therefore** need an additional letter to meet the minimum of three letters required for a lexical word—so <ie> must spell /ī/.

Thanks to Gina Cooke for her insights on use of graphemes <y> and <ie> to spell /ī/.

Bound Morphemes

◆ Work as meaningful units <u>ONLY in combination</u> with other morphemes

◆ NEVER stand alone

◆ SUFFIXES
- ❑ Inflectional Suffixes
  - ✧ Grammatical endings
- ❑ Derivational Suffixes
  - ✧ Changes part of speech

25

Affixes ➔ Prefixes and Suffixes

❑<u>Affixes</u> ➔ bound morphemes that generate derivations and inflections of a base element
- ❑ <u>Prefixes</u>
  - ❑ Prefixes precede base elements within words.
  - ❑ A single base element may have multiple prefixes.
- ❑ <u>Suffixes</u>
  - ❑ Suffixes follow base elements within words.
  - ❑ A single base element may have multiple suffixes.
- ❑ <u>Connective Vowels</u>
  - ❑ Connective vowels <u>follow</u> base elements within words.
  - ❑ Only one connective vowel may follow a base element.

26

Connective Vowels

❑ **Connective Vowels** ➔
  ❑ **Connective vowels <u>follow</u> base elements within words.**
  ❑ **Only <u>one</u> connective vowel may follow a base element.**

synonym	=	syn + onym
thermometer	=	therm + o + meter
proficient	=	pro + fice + i + ent
situation	=	site + u + ate + ion
㉗ psychology	=	psych + o + loge + y

Some Little-Known Orthographic Rules
[Examples Below Shared and/or Inspired by Gina Cooke]

A grapheme can<u>not</u> straddle a morpheme boundary:

➢There is a consonant digraph <ph> grapheme in
  <pro<u>ph</u>et>.
➢There is NO <ph> grapheme in <uphill> or
  <haphazard>: <up> + <hill>   <hap> + <hazard>

➢There is a double vowel <ea> grapheme in <h<u>ea</u>l>.
➢There is NO <ea> grapheme in <create>:
     <cre> + <ate>   <pro> + <cre> + <ate>

㉘

ORTHOGRAPHIC CHANGES WHEN ADDING SUFFIXES
SPELLING RULES

- **1-1-1 OR DOUBLING RULE**
  win ➡ winning   refer ➡ referral   grab ➡ grabbing

- **SILENT e OR DROP RULE**
  give➡giving   escape➡escapee   response➡responsive
  confide➡confident promote➡promotion gene➡genius

  BOUND BASES: stere➡sterile fine➡finite pune➡punish

- **Y OR CHANGE RULE**
  penny ➡ pennies   fury ➡ furious   stingy ➡ stingiest

29

ORTHOGRAPHIC CHANGES WHEN ADDING SUFFIXES
[Examples Below Shared and/or Inspired by Gina Cooke]

1. A grapheme can**not** straddle a morpheme boundary.
2. There are constraints on which consecutive vowels English will allow across morpheme boundaries.

- ❑ <y> and <i> do the same job.
- ❑ The <e> in the grapheme <ie> at the end of free base elements (e.g., *tie*, *die*) is needed to provide the required three letters to "lexicalize" these words.
- ❑ The grapheme <ie> is unnecessary when building something other than a free base element: <tie>
  <tie> → <ty> + <ing> → <tying>
  <tie> + <ed> → <tied>

30

The meaning of the word is the sum of its parts.
How many words can you think of that share these Latin base elements?

mobe-mote-move *same morphological family*
different etymological family

text

fide

***crede**

***duce-duct** *twin bases*

fer

sponse-spond *twin bases*

31

Slingerland Multisensory Structured Language Instruction
Basic Lesson Plan Format

LEARNING TO WRITE
1. Learning new letters
2. Practicing letters newly learned
3. Review of letters previously learned
4. Teaching and Practicing letter connections (Cursive)

AUDITORY	VISUAL
A. Card Practice	**A. Card Practice**
Auditory ⬌ Visual = Phoneme ⬌ Grapheme	Visual ⬌ Auditory = Grapheme ⬌ Phoneme
B. Encoding (segmentation)	**B. Decoding (blending)**
C. Spelling	**C. Preparation for Reading**
1. Base Elements + Affixes	
2. Unpredictable Words	
3. Phrases—Sentences—Paragraphs	
D. Dictation	**D. Structured Reading (Studying)**
E. GOAL: Independent Writing	**E. GOAL: Independent Reading**

Two Types of Suffixes:
Inflectional and Derivational

Inflections and derivational morphemes are two kinds of morpheme units that operate differently in word formation.

➢ INFLECTIONAL SUFFIXES do not change the part of speech of the word to which they are added. The word continues to be a noun, verb, or adjective even with the inflection.

➢ DERIVATIONAL SUFFIXES usually, but not always, change the part of speech of the word to which they are added.

33

Inflections

NOUNS:
- Possession   her*s*
- Gender   alumn*a*
- Number   toy*s*, wish*es*, cris*es*

VERBS:
- Tense   talk*ed*
- Voice   He *was* driv*en*.
- Mood   She *could have been* driv*ing*.

ADJECTIVES:
- Comparison   wild*er*, wild*est*

34

Derivational Complexity

Several types of phonological changes can occur between a base or stem and a <u>derivational</u> suffix:

- syllable regrouping   di<u>ffer</u> ➡ <u>different</u>
- vowel sound change   s<u>a</u>ne ➡ s<u>a</u>nity
- consonant sound change   electri<u>c</u> ➡ electri<u>c</u>ity
- stress alternation   phil<u>oso</u>phy ➡ phil<u>oso</u>phical

35

How We Remember Words

◆Related words are activated in memory when they have <u>meaningful connections</u> and <u>share structural elements at the morpheme level</u>, especially when <u>spelling</u> reveals those connections (Nagy et al, 1989)—<u>even when pronunciation does not</u>:

<late> = to carry; to bear

relate ➡ relative ➡ relation ➡ relationship ➡ interrelate

◆Awareness of morphemes aids <u>understanding and recall</u> of <u>differences among homophones</u>:

site ➡ situation   cite ➡ citation

accept ➡ except

36

Consonant <u>Phoneme</u> // Changes

Consonant phonemes change in pronunciation from one form of a word to another:

- ❑ bom<u>b</u> ➡ bom<u>b</u>ard ➡ bom<u>b</u>ardier
- ❑ *crum<u>b</u> ➡ crum<u>b</u>le**   ➡ <crumb> + <_le>
- ❑ mali<u>g</u>n ➡ mali<u>g</u>nant*
- ❑ *si<u>g</u>n ➡ si<u>g</u>nature ➡ si<u>g</u>nify ➡ si<u>g</u>nal
- ❑ an<u>x</u>ious ➡ an<u>x</u>iety
- ❑ medi<u>c</u> ➡ medi<u>c</u>ine
- ❑ *defini<u>t</u>e ➡ defini<u>t</u>ion
- ❑ repre<u>ss</u> ➡ repre<u>ss</u>ion

**<-le> is _sometimes_ a suffix

37

Revisiting Those <u>BIG</u> Ideas

- ❖ **Words with <u>spelling connections</u> also have meaning connections.**

- ❖ **We don't <u>know the pronunciation of a base</u> until it <u>surfaces in a word</u>.**

- ❖ "… denotation of a root will have echoes, however faint, in the meanings of words descended from it.

- ❖ Furthermore, appreciating a word's etymology and the orthographic denotation of its root leads to understanding of _fine nuances of meaning_ that can often help in distinguishing it from its synonyms."

                             Real Spelling

Morphophonemics
Vowel Phoneme Shifts

Long Vowel Sound	Short Vowel Sound
*sāne	sănity
vīce	vĭcious
nāture	nătural
telescōpe	telescŏpic
*stūdious	stŭdy
analyīze	analyĭsis
*abbrēviate	brĕvity
decīsive	decĭsion
fīnite	fĭnish
cyīclist	bicyĭcle

Morphophonemics

invent	invention
*electric	electrician
mathematician	mathematics
rhetoric	rhetorical
*definite	define finite
specific	species special
solidify	solid
grammar	grammarian
politics	political
*inspiration	inspire

Layers of the English Language
borrowed from Marcia K. Henry

GREEK
specialized words
mostly scientific
dependable
some common non-phonetic
phone+o+graph ⬅combined base elements➡ neur+o+psych+o+loge+y

LATIN
academic language
content area text
"high class" words
formal settings
mostly phonetic

ANGLO-SAXON
compound words
common, everyday
down-to-earth
ordinary situation
many non-phonetic

41

Old English Layer

▪ <u>Compounds</u> are characterized more by their stress pattern than by their spellings. Stress, or accent, almost always occurs on the first word of the compound. Spelling may include a hyphen or a space.

earthquake   oatmeal   baseball   snowman

42

Old English Layer

	COMPOUNDS	
oatmeal	honky-tonk	apple pie
applesauce	day-to-day	green beans
brainwash	two-way	under water
baseball	under-the-table	honor roll
cornbread	twentieth-century	business suit
earthquake	old-fashioned	credit card

43

Homophone Principle
Venezky (1999)

➢ When two words are pronounced the same, when possible, they will be spelled differently *to mark that difference in meaning*.

➢ "... with one etymological concept—*the homophone principle*—we can drop the false assumption that homophones are confusing because they are spelled the same ..."

heal health   please pleasant   steal stealth

loan lone   grown groan   beet beat

scene seen   sight site cite   knead need

44

Saga of the Scribal-o

Before the printing press, monks who were scribes noticed that many of their quill-penned letters were difficult to read. Most troublesome were the letters formed with *similar, beginning, up-and-down strokes*:

m   n   w   u   r   v

45

Saga of the Scribal-o

- Therefore, the wise scribes changed the vowel grapheme *u* to *o* when *u* appeared adjacent to one of the letters listed.

- The scribes could not, however, alter the pronunciation of the words that were affected by the spelling change they made.

- Therefore, the grapheme o in words like, *brother, love, some*, and *wonder*, is pronounced /u/.
  - What about *month* and *Monday*?

Adapted from Carol Murray

46

Think of a word that ends in v...

47

Spelling /r/ with wr...

- **Usually one syllable**
- **Meaning associated with "twisting"**

wring	wreath	wrestle	wrangle	write
wrath	wrinkle	wrong	wrench	wrist

- **What about <wren>?**

Base Elements that begin with <*tw*>…

- Meaning associated with "two"

twins	twine	twinkle
tweezers	twelve	twenty
betwixt		between

49

Etymological Marker?
Venezky 1999

◎ The <w> in <two> is not there as a grapheme representing a phoneme.

◎ It is there to inform readers that <two> is the *spelling for the number*.

◎ … so there is sense to the <o> in <people> when we consider words like <*popular*> and <*population*>—from the *same etymological family*.

50

Why does \<e̱y> spell /ā/ in \<they>?

51

Why is there an \<l> in \<would>?

Why is there an \<l> in \<should>?

52

Is the spelling of <does> unpredictable?

53

Romance (Latin) Layer

Romance Layer

Words of Romance origin, like Anglo-Saxon based words, become <u>affixed</u>. In other words, they often have prefixes and suffixes. Usually, however, the <u>base element does not stand alone</u>; affixes <u>NEVER</u> stand alone.

reject	interrup**t**ed
transmit**t**ing	preven**t**ion

[Nist, J. (1966). *A Structural History of English*. NY: St. Martins Press]

54

Latin Layer

Derivational ➔ Word-Building

❑ ****Words derived from Latin roots/base elements are most common in content area textbooks.**

❑ **Analysis of the number of distinct words in printed school English showed that students encountered over 88,000 "distinct" words in texts through ninth grade (Nagy and Anderson, 1984).**

❑ **About** <u>half the words in printed texts through ninth grade</u> **occur** <u>once in a billion words</u> **of text or less (e.g.,** *inflate, extinguish, nettle***).**

55

Latin Layer

Morphological Awareness ➔ Semantic Transparency

▪ ***For every word a student learns, there are usually between one and three related words that should be understandable.**

▪ ***There are degrees of** <u>semantic transparency</u> **in words**
  o <u>Apparent</u>:   *red* ➔ *redness*
  o <u>Less</u> Apparent: *apply* ➔ *appliance*

▪ ***The less morphological awareness a student has, the more distinct words need to be learned.**

▪ **Semantically transparent words are skewed toward the low end of the frequency distribution to a greater degree than morphologically basic words or semantically opaque words (Nagy and Anderson 1984).**

▪ **About 60% of the unfamiliar words encountered in the middle school years and beyond are sufficiently transparent —even though they are morphologically complex in structure and meaning—that a reader might be able to infer the meaning of the word (Nagy et al., 1989).**

56

Romance Layer

How many words can you think of that share the Latin base element *<nate>?*

57

Romance Layer

How many words can you think of that share these Latin base elements:

<secute-seque> *[to follow]* ?

58

Romance Layer

How many words can you think of that share these Latin base elements:

<grade-gress> *[to step]* ?

59

Romance Layer

How many words can you think of that share these Latin base elements:

<pel-pulse> *[to push]* ?

60

Romance Layer

How many words can you think of that share these Latin base elements:

<pense-pend> *[to hang]* ?

61

Romance Layer

How many words can you think of that share these Latin base elements:

<mit-miss> *[to send]* ?

62

Where Do You <u>Stand</u> on These Questions?

1. What is the <u>base element</u> in <instant>?

2. Is <stand> a <u>free base</u>?

3. Do <circumstances> and <stationary> have the same base element?

4. Do <establish> and <statistical> have the same base element?

63

What are the elements of the word <antidisestablishmentarianism>?

64

Greek Layer

✧ Scientific and mathematical terms incorporated into English in the past 500 years have most often been constructed from Greek morphemes.

✧ Many Greek-derived morphemes combine with other bound morphemes of equal importance in flexible order:

geography	photosynthesis
psychology	philanthropic
chronic	synonym

65

Growth in Phonological, Orthographic and Morphological Awareness in Grades 1 to 6
-Berninger, Abbott, Nagy & Carlisle, 2010-

❑ Three kinds of morphological awareness show greatest growth in the first three or four grades.

❑ One kind of morphological awareness—derivation—continues to show substantial growth after fourth grade.

❑ Studies have shown that morphological awareness makes contributions to academic achievement in several areas:

  ❑ Word Identification—Decoding

  ❑ Reading Comprehension

  ❑ BOTH Word Identification—Decoding and Comprehension

  ❑ Written Expression, especially Spelling (Berninger et al. 2008)

66

Effects of Morphological Awareness

Differences between good and poor spellers are associated with significant differences in sensitivity to word structure at the morphological level. Children with specific written language and spelling disorders have been shown to misuse, substitute, or omit inflected endings more than typical children (Bailet, 1990; Moats, 1996). Insensitivity to morphological aspects of word structure also characterizes adults who spell poorly.

(Fischer, Shankweiler, & Liberman, 1985; Liberman, Rubin, Duques, & Carlisle, 1985; Shankweiler et al., 1996)

67

Slingerland Multisensory Structured Language Instruction Basic Lesson Plan Format

LEARNING TO WRITE
1. Learning new letters
2. Practicing letters newly learned
3. Review of letters previously learned
4. Teaching and Practicing letter connections (Cursive)

AUDITORY	VISUAL
A. Card Practice	**A. Card Practice**
Auditory 🔄 Visual = Phoneme 🔄 Grapheme	Visual 🔄 Auditory = Grapheme 🔄 Phoneme
B. Encoding (segmentation)	**B. Decoding (blending)**
C. Spelling	**C. Preparation for Reading**
1. Base Elements + Affixes	
2. Unpredictable Words	
3. Phrases—Sentences—Paragraphs	
D. Dictation	**D. Structured Reading (Studying)**
E. GOAL: Independent Writing	**E. GOAL: Independent Reading**

Why are these words spelled this way?

commitment

committee

referral

reference

illegal

accommodate

efficacious

effective

69

Layers of English Language
Categorize these words.

Old English	Latin	Greek
table	syllable	anthropology
extract	constellation	character
symmetry	healthy	perspiration
brown	pterodactyl	mystery
insect	utility	brother
interrupt	house	illicit
chaos	complement	phantom
survival	eloquent	been

70

References

- Berninger, V.W., Abbott, R.D., Nagy, W., & Carlisle, J. (2010). Growth in phonological, orthographic, and morphological awareness in grades 1 to 6. *Journal of Psycholinguistic Research, 39*: 141-163.
- Birsh, J.R. (Ed.). (2011). *Multisensory Teaching of Basic Language Skills-3rd Edition*. Baltimore, MD: Paul H. Brookes Publishing Co.
- Henry, M. (2010). *Unlocking literacy: Effective decoding & spelling instruction—2nd Edition*. Baltimore, MD: Paul Brookes Publishing Co.
- King, D.H. (2000). *English Isn't Crazy!* Baltimore, MD: York Press.
- Moats, L.C. (2009) *Speech to Print: Language Essentials for Teachers-2nd Edition*. Baltimore, MD: Paul H. Brookes Publishing Co.
- Venezky, R.L. (1999) *The American Way of Spelling*. New York, NY: The Guilford Press.
- www.realspelling.fr   www.wordworkskingston.com
- www.etymonline.com   www.realspellers.org
- http://linguisteducatorexchange.com/
- http://www.neilramsden.co.uk/spelling/matrix/index.html
- http://www.neilramsden.co.uk/spelling/searcher/index.html

<fide> → "to trust"

Fidelity
+
Intensity
+
Duration
=
Efficacy