

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.

45th Everyone Reading Conference
Dyslexia and Related Learning Disabilities

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 →FOUR CONVERGING PATHS EN ROUTE TO READING AND WRITTEN EXPRESSION←

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English Orthography
Preserves Bits of History

Richard Venezky—1999—page 4

* “English orthography is not a failed phonetic transcription system, invented out of madness or perversity.

* Instead, it is a more complex system that preserves bits of history (i.e., etymology), facilitates understanding, and also translates into sound.”

ENGLISH Is a MORPHOPHONEMIC Language

- English is a morphophonemic language → the pronunciation of polysyllabic words is primarily determined by placement of stress.
- Morphophonemics → interaction between morphological and phonological processes (Venezky, 1999).
- As the number of syllables changes, the stress shifts—and the pronunciation of individual morphemes (and syllables) will change—but the spelling does not change.
- Words with spelling connections have meaning connections.
- The study of spelling—with a focus on the morphophonemic nature of English—connects even unfamiliar words with a common base to their meanings.

finish finite infinite definite infinitesimal final confine infinitive

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infinitive

infinitive (n.)

"simple, uninflected form of a verb, expressing its general sense," 1510s, from earlier use as an adjective (mid-15c.), from Late Latin *infinitivus* "unlimited, indefinite," from Latin *infinitus* "not limited" (see **infinite**). "Indefinite" because not restricted by person or number. Related: *Infinitival*; *infinitively*.

late 14c., "eternal, limitless;" also "extremely great in number;" from Old French *infin* "endless, boundless" and directly from Latin *infinitus* "unbounded, unlimited, countless, numberless," from *in-* "not, opposite of" (see *in-* (1)) + *finitus* "defining, definite," from *finis* "end" (see *finish* (v.)). The noun meaning "that which is infinite" is from 1580s.

finish (v.)
 late 14c., "to bring to an end;" mid-15c., "to come to an end" (intransitive), from Old French *finiss-*, present participle stem of *fenir* "stop, finish, come to an end; die" (13c.), from Latin *finire* "to limit, set bounds; put an end to; come to an end," from *finis* "that which divides, a boundary, border," figuratively "a limit, an end, close, conclusion; an extremity, highest point; greatest degree," which is of unknown origin, perhaps related to *figere* "to fasten, fix" (see *fix* (v.)). Meaning "to kill, terminate the existence of" is from 1755.

A thought to ponder...

“Until you are willing to be confused about what you already know, what you know will never become wider, bigger or deeper.”

-Milton Erikson

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Bruner’s Law

“We want kids to experience **success and failure as information—~~not~~ success or failure.”**

—Jerome Bruner

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English Orthography—David Crystal—2012
Ultimate Test of the Validity of a Spelling Principle:
 “The underlying system is robust and regular, but struggles to be visible through the layers of orthographic practice introduced over the centuries by writers with different linguistic, cultural, and political backgrounds (p. 266).”
 “... the best of way of defeating an enemy is to get to understand him.”
 * Spelling is a linguistic problem that must be solved using linguistic tools.

Orthography
 Etymology + Morphology + Phonics + Phonology

◆ **Etymology** → *interrelationships* of words with their own origins and with other words that share those origins—through *history*

◆ **Morphology** → sequence and structure of *meaningful units*—in English *today*

◆ **Phonology** → units of speech that create meaning only when combined

English’s “Loose Immigration Regulations”
 Richard Venezky—1999—page 7

* “English has always had rather loose immigration regulations for vocabulary.

† Words, unlike people, have been forever welcomed, regardless of their origins.

† Neither quotas nor IQ tests have ever been required for admission to the lexicon.

† And unlike the melting-pot emphasis on assimilation in most of American history, orthography has been unencumbered by pressures to shed its alien

† “Consequently, *bijou*, *chalet*, and *chauffeur* retain their French garb, *trekked* smacks of Dutch (via Afrikaans), *ohm* and *Fahrenheit* are still German, and *vodka* remains recognizably Russian.”

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Etymology
www.etymonline.com
 “Nuggets often nestle in etymonline.”
 -a 4th grade student of Old Grouch

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, mythology

Morpheme ➔ smallest meaningful unit of language

Count the morphemes in these words:

- *elephants
- *election
- *accommodation
- *interrelationship
- photograph
- idiosyncratic
- beneficial
- conscious

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BIG Ideas

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

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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.
- ❖ Both denotation and connotation must be considered.
- ❖ Students who understand language structure notice and use these links in meaning.

Denotation and Connotation

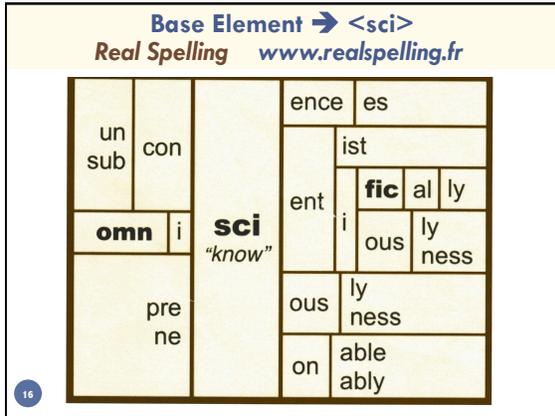
- ❖ **BOTH Denotation AND Connotation must be considered, but they are NOT THE SAME.**
- ❖ **Denotation** → refers to *literal, primary* meaning
- ❖ **Connotation** → refers to other characteristics *suggested or implied*
 - ◆ A word like <mother> denotes “a woman who is a parent” but connotes qualities such as protection and affection.

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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.

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Morphology

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

* <u>a</u> cept	<u>e</u> xcept
<u>e</u> licit	<u>i</u> llicit
<u>a</u> ffect	<u>e</u> ffect
* <u>f</u> iscal	<u>ph</u> ysical
<u>s</u> pecific	<u>p</u> acific
<u>c</u> onscious	<u>c</u> onscience
* <u>d</u> entist	<u>s</u> wiftest
* <u>h</u> ostess	<u>f</u> amous

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

Another BIG Idea

❖ Words with spelling connections also have meaning connections.

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

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Roots—Base Elements

Roots → Etymological or Morphological?

- ❖ Strictly historical term (diachronic)
- ❖ Currently used as exclusively etymological
- ❖ Etymological source of the base element

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Roots-Base Elements

EXAMPLES OF ROOTS

- The **root** of <ugly> is the Old Norse <uggligr> which means “to be feared.”
- The **root** of <gregarious> is the Latin <gregem> which means “flock.”

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Another BIG Idea

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Base Element → <ocean>
 Real Spelling www.realspelling.fr

ocean	s	
	ic	
	o	graph y er
	front	
go	ing	

Roots-Base Elements-Stems

Eponym → a word derived from the name of a person

<ocean>

- from Latin <oceanus>
- from Greek <okeanos> [of unknown origin]
 - Great river or sea surrounding the disk of the Earth (as opposed to the Mediterranean);
 - Personified as Oceanus, son of Uranus and Gaia and husband of Tethys.

In early times, when the only known land masses were Eurasia and Africa, the ocean was an endless river that flowed around them.

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Roots-Base Elements-Stems

Eponym → a word derived from the name of a person

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

⊙<atlas>→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.

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Roots-Base Elements-Stems

Toponyms

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>

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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.

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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

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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

<p><u>FUNCTION WORDS</u></p> <ul style="list-style-type: none"> ▪ conjunctions ▪ prepositions ▪ pronouns ▪ helping verbs ▪ articles 	<p><u>CONTENT WORDS</u></p> <ul style="list-style-type: none"> ▪ nouns ▪ verbs ▪ adjectives ▪ adverbs
--	---

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Function Words

- Have little meaning of their own
- Give information about the function of lexical [content] words
- Are the main concern of grammar books
- Are usually unstressed (unaccented)

Function Words

- conjunctions
- prepositions
- pronouns
- helping verbs
- articles

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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

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**Lexical [Content] Words
Must Have At Least Three Letters**

odd	egg	err	ebb
------------	------------	------------	------------

When a lexical [content] word and a function word are homophones, one more letter 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			

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**Lexical [Content] Words
Must Have At Least Three Letters**

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

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

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

These words cannot be spelled with the single letter <y> grapheme to represent their /t/ phoneme because they begin 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 /t/.

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

Affixes → Prefixes and Suffixes

Affixes → bound morphemes that generate derivations and inflections of a base element

- ◆ **Prefixes**
 - ◇ Prefixes precede base elements within words.
 - ◇ A single base element may have multiple prefixes.
- ◆ **Suffixes**
 - ◇ Suffixes follow base elements within words.
 - ◇ A single base element may have multiple suffixes.

Although there are only about 50 suffixes used in everyday English, suffixes appear in 50% of English words (David Crystal, 2012).

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Connecting Vowel Letter

□ **It connects; it's a vowel; it's ONE vowel letter.**

- ◇ A connecting vowel letter **follows** a base element within a word.
- ◇ Only **one** connecting vowel letter may follow a base element.
 - synonym = syn + onym
- ◇ Default connecting vowel letter in Latin: <i><i>< i>
- proficient = pro + fice + **i** + ent
- Sometimes <i><i>< u>
- situation = site + **u** + ate + ion
- ◇ Default connecting vowel letter in Greek: <i><i>< o>
- thermometer = therm + **o** + meter
- psychology = psych + **o** + loge + y

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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 etymological family
 ↘ different morphological family

text

fide

*crede

*duce-duct *twin bases*

fer

sponse-pond *twin bases*

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A **Sample for Illustration

Basic Daily Lesson Plan Format **INTEGRATED** Structured Literacy Lesson
 Slingerland® Multisensory Structured Language Approach

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
<p>A. Phoneme-Grapheme Practice Auditory • Visual = Phoneme • Grapheme</p> <p>B. Encoding (segmentation)</p> <p>C. Spelling</p> <ol style="list-style-type: none"> 1. Base Elements + Affixes 2. Unpredictable Words 3. Phrases—Sentences—Paragraphs <p>D. Dictation</p> <p>E. GOAL: Independent Writing</p>	<p>A. Grapheme-Phoneme Practice Visual • Auditory = Grapheme • Phoneme</p> <p>B. Decoding (blending)</p> <p>C. Preparation for Reading (Pre-Teaching Vocabulary and Syntax— words, phrases, grammar, punctuation, etc.)</p> <p>D. Reading Connected Text (Structured Reading • Studying)</p> <p>E. GOAL: Independent Reading</p>

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**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.

Inflections

NOUNS:

- Possession hers
- Gender alumna
- Number toys, wishes, crises

VERBS:

- Tense talked
- Voice He was driven.
- Mood She could have been driving.

ADJECTIVES:

- Comparison wilder, wildest

Derivational Complexity

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

- syllable regrouping differ ➔ different
- vowel sound change sane ➔ sanity
- consonant sound change electric ➔ electricity
- stress alternation philosophy ➔ philosophical

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Vowel Sound // Changes

- Long vowel // reduced to schwa (or schwi) //:
 *define → definition compete → competition
- Long vowel // becomes accented short vowel //:
 extreme → extremity *precise → precision
 profane → profanity
- Schwa (or schwi) // becomes accented short vowel //:
 industry → industrious solid → solidify
 *credence → credential electric → electrician
- Schwa (or schwi) // becomes accented long vowel //:
 injure → injurious* labor → laborious*
 specific → species separate → separation

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Consonant Phoneme // Changes

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

- bomb → bombard → bombardier
- *crumb → crumble** → <crumb> + <_le>
- malign → malignant*
- *sign → signature → signify → signal
- anxious → anxiety
- medic → medicine
- *definite → definition
- repress → repression

**<-le> is *sometimes* a suffix

sparkle—twinkle—suckle—speckle—crackle—circle—nestle

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How We Remember Words

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

<fine> = to end; limit; set a boundary

define → finish → finite → infinite → definite → infinity →

final → finalize → finality → indefinable → infinitesimal →

confine → confinement → infinitive

◆ Awareness of morphemes aids understanding and recall of differences among homophones:

sci → conscious cise → decision
 sponse → response panse → expansion

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<late> = to carry; to bear

relate ➔ relative ➔ relation ➔ relationship ➔ interrelate

◆ Awareness of morphemes aids understanding and recall of differences among homophones:

site ➔ situation cite ➔ citation
 accept ➔ except

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How We Remember Words

◎ We know from cognitive experimental research that people with morphological awareness **organize their mental dictionaries so that related words are associated and more readily retrieved** (Schreuder & Baayen, 1995).

◎ ... the mind is **always seeking pattern recognition** to reduce the load on memory and facilitate retrieval of linguistic information:

auditory ➔ auditorium ➔ audit ➔ audition ➔ audience
 inscribe ➔ subscription ➔ scribe ➔ describe ➔ script ➔ ascribable

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Revisiting Those BIG Ideas

❖ Words with spelling connections also have meaning connections.

❖ We don't know the pronunciation of a base until it surfaces in a word.

❖ "... 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

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Triple Word Form Theory
Phonology—Orthography—Morphology
 (Berninger et al., 2003)

◆ Learning to read and write words is a process of increasing awareness and coordination (integration) of three different types of word forms and their parts:

- Phonological Awareness
- Orthographic Awareness
- Morpheme Awareness.

◆ Multidisciplinary evidence for triple word form theory continues to accumulate. 49

Layers of the English Language
 borrowed from Marcia K. Henry

<p>GREEK specialized words mostly scientific dependable some common non-phonetic</p>
<p>LATIN academic language content area text "high class" words formal settings mostly phonetic</p>
<p>ANGLO-SAXON compound words common, everyday down-to-earth ordinary situation many non-phonetic</p>

phone+o+graph ←combined base elements→ neur+o+psych+o+loge+ty

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Old English Layer

▪ **Compounds** 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

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Old English Layer		
<u>COMPOUNDS</u>		
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
52 earthquake	old-fashioned	credit card

Homophone Principle
Venezky (1999)

- * When two words are pronounced the same, if 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

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Old English Layer

Words of Old English origin are characterized as the common, everyday, down-to-earth words used frequently in ordinary situations.

What is the base element in <happiness>?

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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

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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*?

56 Adapted from Carol Murray

Think of a word that ends in v...

<ul style="list-style-type: none"> ▪ have ▪ starve ▪ love ▪ strive ▪ nerve ▪ give ▪ twelve ▪ grieve ▪ live 	<ul style="list-style-type: none"> ▪ believe ▪ move ▪ arrive ▪ heave ▪ relative ▪ motive ▪ beehive ▪ authoritative ▪ attractive
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Why don't English words end in <v>?

The letter <u> shares history and behavior with <v> and has a spelling partnership with <o>. The letters <u> and <v> used to be written—and printed—identically—something like <v>. The early printers did develop two versions of the letter—<v> and <u>—but choice between them was determined ONLY by their position in the word, not whether they were functioning as the vowel or the consonant letter.

When vowel <u> or consonant <v> appeared at the beginning of a word, it was written <v> but when either occurred inside a word it was written <u>:

*vnder have loue
vpon every ouer vse*

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Spelling /r/ with wr...

- Usually one syllable
- Meaning associated with “twisting”

wring	wreath	wrestle	wrangle	write
wrath	wrinkle	wrong	wrench	wrist

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Words that begin with tw...

- Meaning associated with “two”

twins	twine	twinkle
tweezers	twelve	twenty
betwixt		between

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WORDS WITH SPELLING CONNECTIONS HAVE MEANING CONNECTIONS
PHONOLOGY + PHONICS + MORPHOLOGY + ETYMOLOGY = ORTHOGRAPHY
→ **FOUR CONVERGING PATHS EN ROUTE TO AUTOMATIC WORD RECOGNITION AND SPELLING** ←
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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.

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Why does <ey> spell /ā/ in <they>?

they

them

their [y changed to i inside a word]

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

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

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...so what about the <l> in <could>?

ANALOGY

Words that **sound similar** tend to be spelled the same. This process of **analogy** affected many new words as they arrived in English—and some older spellings were changed to conform. (p. 121, Crystal, 2012).

- Throughout the history of English spelling, even in tiny groups of words (e.g., **auxiliary verbs would-should-could**), analogy has had influence.
 - Though they all look the same now, there was no *l* in *could* originally.
 - The other two verbs both had an *l* : *wolde-sholde*.
 - When *wolde* and *sholde* became *would* and *should* in late Middle English, scribes decided there should also be an *l* in *could*.

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Is the **spelling** of <does> unpredictable?

do	does	doing	done
go	goes	going	gone

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Latin Layer

Morphological Awareness → Semantic

- ****For every word a student learns, there are usually between one and three related words that should be understandable.**
- ****There are degrees of semantic transparency in words**
 - **Apparent:** *red* → *redness*
 - **Less 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).**

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Romance Layer

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

67

Romance Layer

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

<u>n</u> ature	<u>n</u> ation
<u>i</u> nnate	<u>n</u> ational
<u>n</u> atural	<u>n</u> ative
<u>n</u> aturalize	<u>p</u> er <u>n</u> at <u>a</u> l

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Romance Layer

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

<secute-seque> [to follow] ?

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Romance Layer

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

<pel-pulse> [to push] ?

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Romance Layer

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

<grade-gress> [to step] ?

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Romance Layer

How many words can you think of that share these Latin base elements: *<mit-miss> [to send] ?*

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Romance Layer

How many words can you think of that share these Latin base elements: *<pense-pend>* [to hang] ?

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The Elusive SCHWA (ə)

- 1895 from German *schwa*
- Ultimately from Hebrew *shewa*
- “A neutral vowel quality”
- Literally means “emptiness”

Accent—Stress Hints

<p>1. ___ ' ___</p> <p>2. ___ base element' ___</p> <p>3. ___ ' ___</p> <p style="font-size: x-small;">*British English pronunciation variations (e.g., conTROVersy, CONtribute)</p> <p style="font-size: x-small;">© Nancy Cushen White, Ed.D.</p>	<p>4. ___ ' /sh/ ___</p> <p>5. ___ ' ity</p> <p style="padding-left: 20px;">___ ' ic</p> <p style="padding-left: 20px;">___ ' ial</p> <p style="padding-left: 20px;">___ ' ian</p> <p style="padding-left: 20px;">___ ' ion</p> <p style="padding-left: 20px;">___ ' ious</p> <p style="text-align: right; font-size: x-small;">75</p>
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Accent—Stress Hints
with examples

1. ___ ' ___	spider, scramble, olive, crisis
2. ___ base element'	provide, invert
___ base element' ___	repellent, committee, referral
3. ___ ' ___	cucumber, government, reference
___ ' ___	ridiculous, provisional, reciprocal
4. ___ ' /sh/ ___	education, delicious, proficient
5. ___ ' ity	responsibility, tenacity, personality
___ ' ic	electric, cosmic, authentic, algebraic
___ ' ial	familial, radial,
___ ' ian	Italian, crocodilian, physician,
___ ' ion	champion, religion, onion
___ ' ious	scrumptious, curious, delicious

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SCHWA

- ◆ Vowel sound in an unstressed (unaccented) syllable
- ◆ Degrees of Schwaness
- ◆ The sound of the schwa is NOT the same as the stressed (accented) /ū/ as in /must/.
 - ◇ *That would be impossible.*
 - ◇ *Why?*

The Elusive SCHWA /ə/

I want to be a schwa. A schwa is never stressed.

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Morphophonemics	
invent <u>u</u>	invention
*electric <u>i</u>	electrician
mathematician	mathematics
rhetoric	rhetorical
*defin <u>i</u> te	define fin <u>i</u> te
spec <u>i</u> fic	spec <u>i</u> es spec <u>i</u> al
solid <u>i</u> fy	solid
gramm <u>a</u> r	gramm <u>a</u> rian
pol <u>i</u> tics	pol <u>i</u> tical
*inspir <u>a</u> tion	inspir <u>a</u> re

Where Do You Stand on These Questions?
1. What is the base element in <instant>?
2. Is <stand> a free base ?
3. Do <circumstances> and <stationary> have the same base element ?
4. Do <establish> and <statistical> have the same base element ?

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

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Greek Layer Scientific and Mathematical Terms	
neurology	apostrophe
physician	catalyst
gyroscope	hypnotize
mythology	anonymity
amorphous	hypothermia
technology	synthesis
hemisphere	stereotype
sympathy	symmetry

Effects of Morphological Awareness

- Phonological awareness facilitates morphological awareness in younger children (Carlisle & Nomanbhoy, 1993), and both are associated with stronger reading skills.
- Problems that poor readers have with applying morphological rules to unfamiliar base words are attributable in large part to more basic weaknesses in phonological processing (Carlisle, 1987, 1988; Fowler & Liberman, 1995).
- *Because morphemes are units of both sound **and** meaning, deficits in phonological processing contribute to confusion of similar-sounding words and word parts, failure to recognize similarities of structure, and failure to either store or retrieve word form with precision.

Effects of Morphological Awareness

- Better readers with excellent language abilities in fourth through eighth grade are able to talk about word structure and word meaning in a precise, decontextualized manner that reveals conscious knowledge of phonology and morphology (Snow, 1990).
- Adults who read poorly have less information in their mental dictionaries as well as less ability to organize and gain access to words using morphological relationships (Cunningham & Stanovich, 1997; Leong, 1989; Shankweiler et al., 1996).
- Adults who read accurately and fluently have accumulated wide networks of word families for ready access and cross-referencing in the lexicon (Nagy et al., 1989).

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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; Berninger, Abbott, Nagy, & Carlisle, 2010; Kirby et al., 2012; Goodwin & Ahn, 2013)

A **Sample for Illustration

Basic Daily Lesson Plan Format **INTEGRATED** Structured Literacy Lesson
 Slingerland® Multisensory Structured Language Approach

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
<p>A. Phoneme-Grapheme Practice Auditory ● Visual = Phoneme ● Grapheme</p> <p>B. Encoding (segmentation)</p> <p>C. Spelling</p> <ol style="list-style-type: none"> 1. Base Elements + Affixes 2. Unpredictable Words 3. Phrases-Sentences-Paragraphs <p>D. Dictation</p> <p>E. GOAL: Independent Writing</p>	<p>A. Grapheme-Phoneme Practice Visual ● Auditory = Grapheme ● Phoneme</p> <p>B. Decoding (blending)</p> <p>C. Preparation for Reading (Pre-Teaching Vocabulary and Syntax—words, phrases, grammar, punctuation, etc.)</p> <p>D. Reading Connected Text (Structured Reading ● Studying)</p> <p>E. GOAL: Independent Reading</p>

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

1. A grapheme **cannot** straddle a morpheme boundary.
2. There are constraints on which (and how many) consecutive letters English will allow.

- <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>

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Why are these words spelled this way?

commitment
 committee
 referral
 reference
 illegal
 accommodate
 efficacious
 effective

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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

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Layers of English Language
Categorize these words.

Old English	Latin	Greek

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