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# **Word Smarts**

## **Using Morphology (Bases & Affixes) to Develop Vocabulary Skills**

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OELAS • Tucson, AZ • December 2018

### **I. Introduction**

- a. motivation for teaching morphology
- b. terminology

### **II. First Level Morphology**

- a. Anglo-Saxon base words & affixes
- b. basic parts of speech for suffixing

### **III. Second Level Morphology - Latinate Words**

- a. Latin bases and affixes
- b. elements of a lesson
- c. suffixes versus final stable syllables
- d. Latin template & connectives

## Terminology for Morphology Study

<u>affix</u>	prefix or suffix that can be attached to the base
<u>base</u>	morpheme that holds the core meaning of a word; every word has one stands alone; often called base word (e.g., <u>port</u> , <u>kind</u> )
<i>free base</i>	only appears as part of a larger word (e.g., <u>struct</u> , <u>mit</u> )
<i>bound base</i>	
<u>base word</u>	free base; word even when no affixes are added (e.g., <u>kind</u> )
<u>final stable syllable</u>	cluster of letters at the end of a word whose pronunciation remains consistent regardless of the word in which it appears (e.g., <u>-tion</u> , <u>-ble</u> , <u>-ture</u> ); <i>not</i> synonymous with the term suffix
<u>morpheme</u>	smallest component of a word that has meaning
<u>phoneme</u>	smallest unit of speech sound (e.g., /b/, /ch/)
<u>prefix</u>	affix placed before the base of a word (e.g., <u>pre-</u> , <u>ab-</u> )
<u>root</u>	word in an origin language from which English bases are derived; (sometimes, the term is used to identify bases)
<u>suffix</u>	affix placed after the base of a word
<i>derivational (lexical):</i> (shifts part of speech)	vowel: -able, -ance, -ate, -er (noun), -ish, -ive, -ize, -ous, -us consonant: -ly, -like, -ment, -ful, -tude, -less
<i>inflectional (grammatical):</i> (does not shift part of speech)	vowel: -ed, -er (comparative), -es, -est, -ing consonant: -ly, -'s, -s
<hr/> <u>assimilated prefix</u>	prefix (often nicknamed chameleon) where, for ease of pronunciation, the final letter changes according to the initial letter of the base to which it is attached (e.g., <u>ad-</u> changes to <u>ar-</u> before <u>range</u> to make <u>arrange</u> ; <u>in-</u> changes to <u>im-</u> before <u>pact</u> to make <u>impact</u> )
<u>element</u>	(sometimes called combining form) often used to describe Greek-based bases and affixes (e.g., <u>phone</u> , <u>crat</u> , <u>phys</u> , <u>epi-</u> , <u>a-</u> )
<u>connective</u>	letter(s) in English words used to combine two morphemes; connectives function as glue and have no meaning (not morphemes)
<i>Latin-based</i>	connect a base to a suffix or two suffixes to each other (e.g., <u>palimony</u> , <u>gradient</u> , <u>monument</u> ). <u>-i-</u> and <u>-u-</u> are connectives; while <u>-ul-</u> is sometimes identified as a connective, it is actually suffix <u>-ule</u> , where the <u>e</u> has dropped before a vowel suffix
<i>Greek-based</i>	connective <u>-o-</u> often joins two elements (e.g., <u>photograph</u> , <u>democracy</u> )

*note:* Because in linguistics the term "root" refers to the word (in another language) from which our current stem or base is derived, base is a more clear term to describe the core meaning in an English word. Often, however, in word study with students, the term "root" is used interchangeably with "stem" and "base."

## Selecting Word Origins

Label each word as AS = Anglo-Saxon; G = Greek; or L = Latin

sing	surreptitious	regenerate	hundred
mutual	what	phase	evacuate
monochrome	telepathy	those	phonics
forty	from	abbreviate	incredulous
declension	manuscript	phonograph	moat
pyre	pathology	epidemic	recuperate
expenditure	does	miss	
laugh	white	abnormal	<i>bonus words:</i>
orchid	biology	contraception	biodegradable
distribute	consequence	elbow	graphomotor
psychology	watch	philanthropist	subatomic

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## Identifying Morphemes

Underline the base words. Box the affixes (prefixes and suffixes).

cook	preheat	unworthy
cooking	overheated	worthlessness
cookery	like	worthiest
overcooked	likely	understandable
heat	liking	underactive
heating	likelihood	hopefully
heater	worth	unwholesome



## ***Morpheme Instruction at the Elementary Level: A Week's Lesson in E.L.A.***

1. Introduce.
  - a. Write the morpheme for students to see. Write affixes with dashes to show they attach to bases. (e.g., -s, un-)
  - b. Have students trace and write the morpheme, naming its letters as they write.
  - c. If the morpheme is bound, write it in a keyword to show how it is used.
  - d. Have students pronounce, trace, and write the keyword, naming its letters as they write.
  - e. Explain and write the meaning of the morpheme. (Either use direct instruction or, wherever possible, help students use discovery learning to uncover its meaning.)
  - f. Provide or ask students to create a personal card with the morpheme on the front and its keyword and meaning on the back.
  - g. Using a Post-it, add the morpheme to the morpheme wall or chart.
2. Generate with the students a list of words that contain the new morpheme.
3. Ask questions to help students generate other known words that contain the morpheme. (e.g., for un-: "What would a word be for 'not kind'?" (unkind)  
(e.g., for port: "What would a word be for 'to carry back'?" (report))
4. Have students build a matrix for the morpheme or build word sums from an existing matrix.
5. Have students locate and underline the morpheme in words containing it. Alternatively, have the students complete word sorts.
6. Have students participate in morphemic awareness activities (oral manipulation of morphemes in words). Use felts or chips to represent the morphemes you move just as you would for phonemic awareness activities. (See Donah's texts for scripted activities.)

*Instructor:* Say teach.

*Student:* teach

*Instructor:* Add /ing/ to teach.

*Student:* teaching

*Instructor:* Change /ing/ in teaching to /able/.

*Student:* teachable

*Instructor:* Add the prefix un- to teachable.

*Student:* unteachable

7. Have students read phrases/sentences that include examples of words containing element.
8. Provide word, phrase, and sentence dictation that includes examples of words containing element.
9. Have students write sentences with words containing element.
10. Have students locate words that contain familiar prefixes and bases in paragraphs or longer pieces.

\* *Games and other activities can be added or even used instead of some of the activities above. See separate page of supplemental activities.*

# ***Morpheme Instruction at the Middle & High School Level: A Week's Lesson in E.L.A.***

1. Introduce.
  - a. Write the morpheme for students to see. Include appropriate dashes for affixes. (e.g., pre-, contra-, -ment, -age *but* port, struct)
  - b. Have students trace and write the morpheme, naming its letters as they write.
  - c. Write the morpheme in a keyword to show how it is used.
  - d. Have students pronounce, trace, and write the keyword, naming its letters as they write.
  - e. Explain and write the meaning of the morpheme. (Either use direct instruction or, wherever possible, help students use discovery learning to uncover its meaning.)
  - f. Provide or ask students to create a personal card with the morpheme on the front and its keyword and meaning on the back.
  - g. Using a Post-it, add the morpheme to the morpheme wall or chart.
2. Generate with the students a list of words that contain the new morpheme.
3. Provide definitions, and have students retrieve from memory other, recognizable but less familiar, words that contain the studied morpheme.
4. Have students build a matrix for the morpheme or build word sums from an existing matrix.
5. Have students locate and underline the morpheme in words containing it. Alternatively, have the students complete word sorts.
6. Have students participate in morphemic awareness activities (oral manipulation of morphemes in words). Use felts or chips to represent the morphemes you move just as you would for phonemic awareness activities. (See Donah's texts for scripted activities.)

*Instructor:* Say constructed.

*Student:* constructed

*Instructor:* Change the /ed/ in constructed to /ing/.

*Student:* constructing

*Instructor:* Add re to the beginning of constructing.

*Student:* reconstructing

*Instructor:* Drop the first prefix and the /ing/ in reconstructing.

*Student:* construct

*Instructor:* Add /iv/ to the end of construct.

*Student:* constructive.

7. Have students read phrases/sentences that include examples of words containing morpheme.
8. Provide word, phrase, and sentence dictation that includes examples of words containing morpheme.
9. Have students write sentences with words containing morpheme.
10. Have students locate words that contain familiar prefixes and bases in paragraphs or longer pieces.

\* *Games and other activities can be added or even used instead of some of the activities above. See separate page of supplemental activities.*

## *A Technique for Reviewing Word Parts & Vocabulary Terms Independently*

### To study your cards use **“The Box Method”!**

- 1) Put down 4 cards to form your “BOX”  
Word up, definition down:

democracy	convention
primary	delegate

- 2) Quiz yourself  
Pick up a card, do you know the definition?
- YES!** Set it aside, and place a new card in your box.
- NO...** carefully review the back of the card until you feel you know it, then put it back in your box, and choose another card from your box to answer.  
No card leaves the box until you get it right once.  
Keep putting aside the cards you know and reviewing the ones you don't until you know them all!
- 3) Now try it with the definitions up!

*This is a much more effective way to learn your cards than just flipping through the deck!*

“The Box Method” William Van Cleave & Shirley Kokesh  
Instruction sheet by Susan Schambach and Cheryl Swanson, Triad Academy, Winston-Salem, N.C.

### *Identifying Morphemes: The /shun/ Question*

1. Underline the base.      2. Box any affixes.      3. Circle any connectives.

contraction

regression

magician

Guess    c o n t r a c t i o n    r e g r e s s i o n    m a g i c i a n

Correct Answer    c o n t r a c t i o n    r e g r e s s i o n    m a g i c i a n

## ***Sample Activity: Sister Words for Shared Meaning***

<b>challenge</b>	<b>sister word</b>	<b>shared meaning</b>
perturbed	disturb	-----
benefactor	benefit	-----
rupture	disrupt	-----
amiable amicable	amigo	-----
envision	vision	-----
enclosure	close	-----
antibiotic	antisocial	-----
	biology	-----
autobiography	automobile	-----
	biology	-----
	paragraph	-----
euphony	euphemism	-----
euthanasia	eulogy	-----
geothermal	geography	-----
	Thermos	-----



**Sample Activity: Identifying Morphemes**

Underline bases, circle connectives, and box affixes.

**Latin structure**

confide

eruption

counterproposal

regenerative

**Greek structure**

psychometrics

photographic

synchronize

sympathetic

**Sample Activity: Using Advanced Matrices for Word Building**

de re	con	<b>struct</b> "build"	ible			<i>structure</i>
in	de		ing			
in ob			ion	or		
		s	al	ly		
		ure	ed			
			ing			
			s			

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**Sample Activity: Sort Words by Common Morpheme**

benevolent	compelling	benefactor	pedal
pedometer	polygamy	compulsory	impulsivity
polyester	expedient	polygon	beneficial
repulsive	benign	impediment	polyglot

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<u>pede</u>	<u>poly</u>	<u>bene</u>	<u>pel / pulse</u>
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-----	-----	-----	-----
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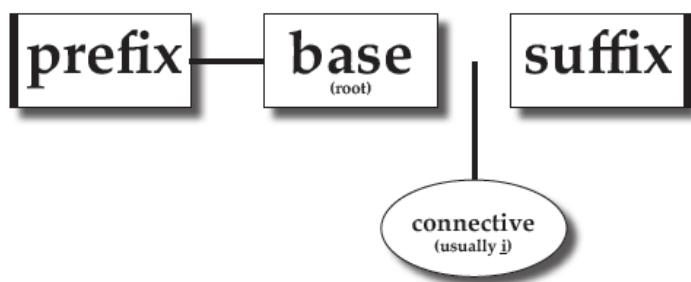
**Sample Activity: Continuum Vocabulary**

angry	irascible	smart	shrewd
raging	infuriated	intelligent	insightful
wild	enraged	clever	brainy
tempestuous	irate	fast	wise
wrathful	provoked	sharp	bright
furious	aggravated	astute	brilliant
mad	livid		
huffy	indignant		
hot under the collar	outraged		

## Latin Connectives Practice Sheet

Underline bases, circle connectives, and box affixes.

expedient	spatula
muscular	alleviate
petunia	testimony
magnitude	impediment
virtuous	imperial
continual	egregious
gratify	radiant
hysteria	unofficial
spectacular	appreciate
monument	editorial
cautious	malicious
deficiency	exponential
popular	suburbia
evaluate	injurious
tempestuous	parsimonious
brilliant	marsupial



Three key Latin connectives are i, u, and ul. Be aware that connective ul is actually suffix ule, where the e has dropped before a vowel suffix. You should accent the syllable that comes before the Latin connective:

sól i tude                      món u ment                      rég ul ate

u and ul are always long:

promiscuuous                      manuul                      musculur

Latin connective i is by far the most common.

Use these rules for pronouncing it:

1. i = /ē/ before a vowel suffix: curious
2. i = /y/ after l or n: peculiar
3. i = /ĩ/ before a consonant: multitude

A sampling of useful suffix rules:

-ous = adjective                      -ate /āt/ = verb  
 -us = noun                              -ate /ět/ = adj./noun

## Some Sample Matrices

		ab ad de re se	<b>duct</b> "to lead"	ile ion or	
super	con				
post re under	pro			ive	ly ness

		con de re se	<b>duce</b> "to lead"	ate	ed ion
re un	e			er ible	
re	in intro pro			ive	ness

<b>astro</b>		<b>phys</b> "natural science"	ic	al ist s
meta				
<b>ge</b>	o		io	logy
			ique	

<b>poly</b> "many"	<b>gam</b>	ist	s
		y	
	<b>gon</b>	al	
	<b>graph</b>	s	
	<b>nom</b>	ial	s
	<b>pept</b>	ide	s
	<b>phag</b>	ia	
		ism	
	<b>the</b>	ist	ic
	<b>ureth*</b>	ane	
	ploid		
	un	<b>satur</b>	ate

	<b>calc</b> "stone"	ule	able us	
			ate	ed ion or s
				ing ly

acr an ep hom pseud syn	<b>onym</b> "name"	ous
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Created with **Mini Matrix-Maker**, at [www.neilramdsen.co.uk/spelling/matrix](http://www.neilramdsen.co.uk/spelling/matrix)

Created with Mini Matrix-Maker, at [www.neilramdsen.co.uk/spelling/matrix](http://www.neilramdsen.co.uk/spelling/matrix)

# Useful Resources

## Advanced Word Structure & History of the English Language:

- Anderson, C. Wilson, T. Elli Cross, and Joan Stoner. *VAK Tasks, Intermediate Prefixes, Roots and Suffixes series, Essential Roots series, Essential Prefixes series. Workbook of Resource Words for Phonetic Reading.* wvced.com
- Barr, Cooper, Follis, Lindsay, Parsons. *Prefixes, Roots, Suffixes.* (3 reference texts.) wvced.com
- \* Beck, Isabel L., Margaret G. McKeown, Linda Kucan. *Bringing Words to Life, Second Edition: Robust Vocabulary Instruction.* 2013. guilford.com.
- \* Beck, Isabel L., Margaret G. McKeown, Linda Kucan. *Creating Robust Vocabulary: Frequently Asked Questions and Extended Examples.* 2008. guilford.com.
- Bowers, Peter. *Teaching How the Written Word Works.* wvced.com.
- \* Carreker, Suzanne. *Word Detective: Discovering The History of The English Language.* neuhaus.org.
- Donah, Sandra. *Improving Morphemic Awareness Using Latin Roots & Greek Combining Forms.* wvced.com.
- Donah, Sandra. *Improving Morphemic Awareness Using Base Words & Affixes.* wvced.com.
- Gold, Diane Hickey, Elaine Russo, Linda Wallace, Judy Shapiro. *PS: Prefixes, Suffixes, Roots (A Resource of Lists, Phrases, Sentences, Poems, and Stories).* wvced.com.
- Gold, Diana Hickey, Elaine Russo, Linda Wallace, Judy Shapiro. *PPS: Advanced Prefixes, Suffixes, Roots, and Connectives (Resource of Lists, Phrases, Sentences, Stories & Activities).*
- Kemmer, Suzanne. *Words In English* (website). ruf.rice.edu/~kemmer/Words04
- \* King, Diana Hanbury. *English Isn't Crazy! The Elements Of Our Language And How To Teach Them.* proedinc.com.
- Kleiber, Margaret. *Specific Language Training: An Orton-Gillingham Curriculum for Adolescents.* wvced.com.
- Morgan, Kenneth B. *Dynamic Roots - Language Training Program.* wvced.com.
- Van Cleave, William. *Everything You Want To Know & Exactly Where To Find It: A Reference Guide for Teachers of Orton-Gillingham & Other Multisensory Approaches.* wvced.com.
- Van Cleave, William & Caroline Dover. *Phrases & Sentences for Reading & Spelling.* wvced.com.

## Vocabulary & Morphology Websites:

dictionary.com          vocabulary.com          etymonline.com          visualthesaurus.com

matrix maker (Bowers & Ramsden): <http://www.neilrammsden.co.uk/spelling/matrix/index.html>

## Some Good Morpheme Lists:

<http://drpaulasprescriptions4pd.wikispaces.com/file/view/Root+words+in+content+areas.pdf>

<http://www.4gaslps.com/CommonRootWd4MSciSocSt.pdf> (simple lists for math, science, social studies)

<http://www.owasso.k12.ok.us/webpages/rcollins/files/greek%20and%20latin%20root%20words.pdf>  
(biology morphemes)

<http://academic.cuesta.edu/acasupp/as/506.HTM> (morphemes grouped in interesting ways)

<http://www.biologycorner.com/worksheets/language.html> (science roots)

[http://www.asdk12.org/middlelink/LA/vocabulary/forms/Greek\\_Latin\\_Roots.pdf](http://www.asdk12.org/middlelink/LA/vocabulary/forms/Greek_Latin_Roots.pdf)  
(1 simple page for each of math, science, social studies, and language arts)

[http://sscking.files.wordpress.com/2013/01/list\\_-\\_root\\_words.pdf](http://sscking.files.wordpress.com/2013/01/list_-_root_words.pdf) (more comprehensive science morpheme list)

<http://www.readwritethink.org/files/resources/printouts/content-area-roots.pdf> (roots cross referenced by content with words for each content)

<http://ancienthistory.about.com/od/mathematics/a/061210EtymologyGeometryTerms.htm>  
(math terms in depth)

## Research Supporting Morphological Intervention:

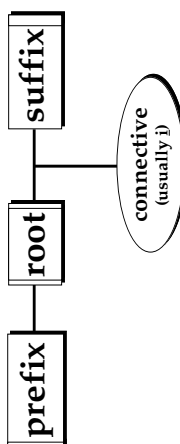
- Bowers, P. N., Kirby, J. R, & Deacon, S.H. 2010. "The effects of morphological instruction on literacy skills: A systematic review of the literature." *Review of Educational Research*, 80, 144–179.
- Goodwin, A. P., & Ahn, S. 2010. "A meta-analysis of morphological interventions: effects on literacy achievement of children with literacy difficulties." *Annals of Dyslexia*, 60, 183–208.
- Goodwin, A. P. & Ahn, S. 2013. "A Meta-Analysis of Morphological Interventions in English: Effects on Literacy Outcomes for School-Age Children." *Scientific Studies of Reading*, 1–29, 2013.

# Tracking Word Origins

A two-color poster-size version of this chart is available from W.V.C. ED.  
Please do NOT copy this chart except for personal reference.

**Latin Words: 55%**


**General Trends**



usually multisyllabic words  
few vowel teams besides ai: assail, retain

**Common Structures**

connectives i, u, and ul: mediate, monument, muscular, solitude  
ti, si, and ci = /sh/: notation, crucial  
tu = /choo/: eventual, fortunate, spatula  
ture = /cher/: adventure, signature, nature  
chameleon prefixes:  
attention, collapse, difference, illegal  
ct, pt: act, tempt  
soft c before e or i:  
certain, city




**Anglo-Saxon Words: 20%**

**General Trends**

usually one syllable words  
numbers 1-1000: one, twenty  
basic color words: brown, green  
simple body parts: arm, throat  
most sight words: could, do  
most vowel teams: boat, house  
short words with silent letters: ghost, know

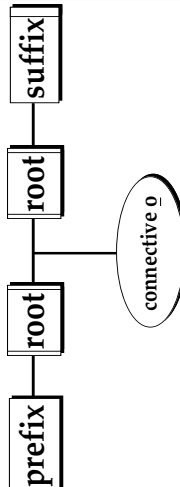
**Common Structures**

ff-ll-ss words: cliff, tall, grass  
ch = /ch/: chore, chin, bench  
ck, tch, and dge: back, witch, edge  
th in short words: than, thin, thick  
k in short words: keep, kill, kind  
wh: when, whisper  
ng: hang, song, sting  
wr: wrist, write  
wild/old words: child, mind, post, told  
2 syllable consonant-  
le words: table, fizzle, hurdle



**Greek Words: 11%**

**General Trends**



often involve science, school, or the arts

**Common Structures**

connective o: democrat, photograph  
y = i: cyclone, gym, myth, type  
ph = /f/: phobia, phonics, typhoon  
ch = /k/: monarch, orchid, school  
k in longer words: kilometer, kinesthetic  
th in longer words: athlete, thyroid  
silent initial p: pneumonia, psychology  
ending -ology:  
archaeology, biology  
ending -ic: charismatic, chronic, music

