

# Developing Literacy in the Content Areas through Structured Word Study

**presented by Sue Hegland**  
Multisensory structured language tutor  
Parent of a dyslexic learner  
Student of orthographic linguistics

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## Agenda

- Foundational concepts
- Study of <insect & sector>
- Clarification questions
- Examples, examples, examples
- Resources for further learning
- Questions

2

insect            prelude  
sector            ludicrous

collage            democracy  
collagen            epidemic

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## Foundational Concepts

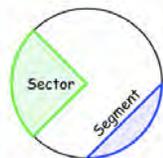
- Studying a word family is exponentially more powerful than studying isolated words
- Starting with a word's spelling rather than its pronunciation is the only way to make sense of the pronunciation of every word in English
- Studying morphology & etymology from day one unlocks meaning of unfamiliar words
- Structured word study through scientific investigation reveals the English spelling **system** and enables learning for a lifetime

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insect  
sector



“The industrial **sector** of the economy makes finished products which can be utilized...”



What hides connection?

1. Pronunciation
2. Connotation/usage

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insect → in + **sect**  
sector → **sect** + or

Written morpheme is *element*  
Base (*element*) carries *orthographic denotation*

Bases can be **bound**

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“religious **sect**”

insect → in + sect  
sector → sect + or

Written morpheme is **element**  
Base (**element**) carries *orthographic denotation*

Bases can be *bound* or **free**

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etymonline.com

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**insect (n.)**

c. 1600, from Latin (*animal*) *insectum* " (animal) with a notched or divided body," literally "cut into," noun use of neuter past participle of *insectare* "to cut into, to cut up," from *in-* "into" (see *in-* (2)) + **secare** "to cut" (see **section** (n.)).

Source: etymonline.com

<secare> “cut”

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**sector (n.)**

1560s, "section of a circle between two radii," from Late Latin *sector* "section of a circle," in classical Latin "a cutter, **one who cuts**," from *sectus*, past participle of **secare** "to cut" (see **section** (n.)). Translated Greek *tomeus* in Latin editions of Archimedes. Meaning "area, division" appeared 1920, generalized from military sense (1916) of "part of a front," based on a circle centered on a headquarters. As a verb from 1884. Related: *Sectoral*; *sectorial*.

Source: etymonline.com

<secare> “cut”

10

**sect (n.)**

mid-14c., "distinctive system of beliefs or observances; party or school within a religion," from Old French *secte*, *sete* "sect, religious community," or directly from Late Latin *secta* "religious group, sect in philosophy or religion," from Latin *secta* "manner, mode, following, school of thought," literally "a way, road, beaten path," from fem. of *sectus*, variant past participle of *sequi* "follow," from PIE *\*sekw-* (1) "to follow" (see **sequel**). Confused in this sense with Latin *secta*, fem. past participle of *secare* "to cut" (see **section** (n.)). Meaning "separately organized religious body" is recorded from 1570s.

Source: etymonline.com

<sequi> “follow”

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<sequi> “follow”

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insect  
sector

<b>bi</b>	<b>sect</b> "cut"	ion	al
<b>tri</b>		or	s
dis in inter mid sub trans		s	

1. Root: from Latin <secare>
2. Base: <sect + or → sector>  
<in + sect → insect>

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<b>bi</b>	<b>sect</b> "cut"	ion	al
<b>tri</b>		or	s
dis in inter mid sub trans		s	

What reveals connection?

1. Spelling → base element
2. Orthographic denotation

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bisector

<b>bi</b>	<b>sect</b> "cut"	ion	al
<b>tri</b>		or	s
dis in inter mid sub trans		s	

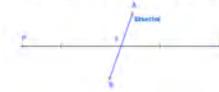
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1. Angle bisector  
A line that cuts an angle into two equal parts. In the figure below the blue line bisects the angle LJM. The blue



line is the bisector. For more on this see Angle bisector.

2. Line segment bisector  
A line which cuts another line segment into two equal parts. In the figure below, the line segment AB is the bisector. It bisects the line PQ - dividing it into two equal parts. For more on this see Line bisector.



actor  
radiator  
navigator

"cut"  
bi + sect + or  
"two" agent suffix

Source: <http://www.mathopenref.com/bisector.html>

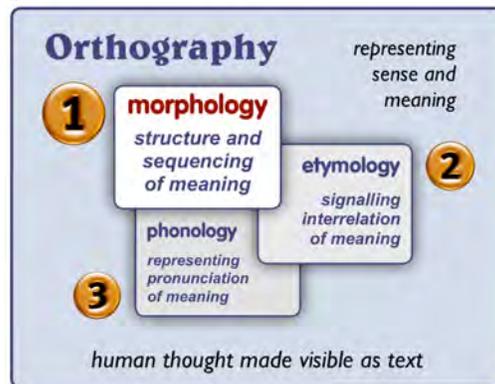
sectional  
midsection  
dissection

<b>bi</b>	<b>sect</b> "cut"	ion	al
<b>tri</b>		or	s
dis in inter mid sub trans		s	

/ʃ/ → <t>

17

source: realspelling.fr

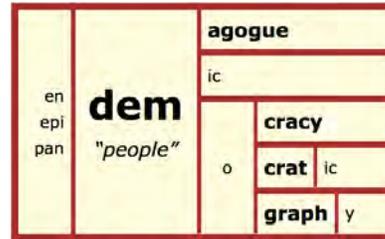


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## Foundational Concepts

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Greek  
<demos>  
"people"

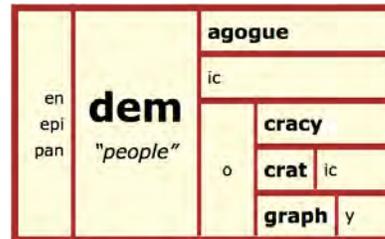
democracy → dem + o + cracy  
epidemic → epi + dem + ic

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[ə]  
democracy

epidemic

21



endemic  
epidemic  
pandemic

22

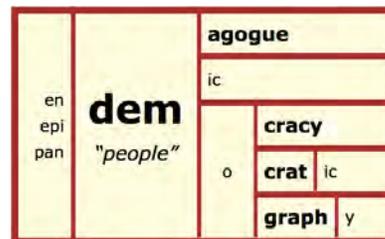
**epidemic (adj.)**  c. 1600, "common to or among people," originally and ultimately etymologically, in reference to French *épidémique*, from "epidemic disease," from *epidemia*, from Greek *epi-* "place; prevalence of an epidemic disease" (especially the plague), from *epi-* "among, upon" (see *epi-*) + *demos* "people, district" (see *demotic*).

**endemic (adj.)**  "particular to a people or locality," 1650s (*endemic(al)*), with *-ic* + Greek *endemos* "native, dwelling in (a place), or of belonging to a people," from *en* "in" (see *en-* (2)) + *demos* "people, district" (see *demotic*). From 1660s as a noun.

Source: etymonline.com

**pandemic (adj.)**  1660s, from Late Latin *pandemus*, from Greek *pandemos* "pertaining to all people; public, common," from *pan-* "all" (see *pan-*) + *demos* "people" (see *demotic*). Modeled on *epidemic*. The noun is first recorded 1853, from the adjective.

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nudge/shift

endemic  
epidemic  
pandemic

"in"  
"among or upon"  
"all."

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usage: A disease that quickly and severely affects a **large number of people** and then subsides is an **epidemic**: *throughout the Middle Ages, successive epidemics of the plague killed millions. Epidemic is also used as an adjective: she studied the causes of epidemic cholera.* A disease that is **continually present in** an area and affects a relatively small number of people is **endemic**: *malaria is endemic in (or to) hot, moist climates.* A **pandemic** is a widespread epidemic that may affect **entire** continents or **even the world**: *the pandemic of 1918 ushered in a period of frequent epidemics of gradually diminishing severity.* Thus, from an epidemiologist's point of view, the Black Death in Europe and AIDS in sub-Saharan Africa are pandemics rather than epidemics.

Source: Mac dictionary (New Oxford American Dictionary)

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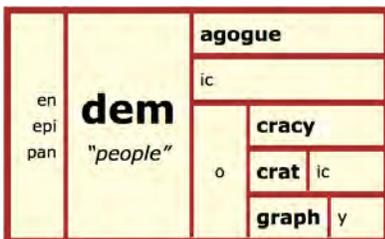
Source: Mac dictionary (New Oxford American Dictionary)

27

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Source: Mac dictionary (New Oxford American Dictionary)  
Emphasis in red is mine.

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epidemic

epicenter  
epitaph  
epidermis  
epilogue

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**epi-**   
before vowels reduced to *ep-*, before aspirated vowels *eph-*, word-forming element meaning "on, upon, above," also "in addition to; toward, among," from Greek *epi* "upon, at, close upon (in space or time), on the occasion of, in addition," from PIE *\*epi*, *\*opi* "near, at, against" (source also of Sanskrit *api* "also, besides;" Avestan *aipi* "also, to, toward;" Armenian *ev* "also, and;" Latin *ob* "toward, against, in the way of;" Oscan *op*, Greek *opi* "behind;" Hittite *appizzis* "younger;" Lithuanian *ap-* "about, near;" Old Church Slavonic *ob* "on"). A productive prefix in Greek; also used in modern scientific compounds (such as **epicenter**).

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en epi pan	<b>dem</b> "people"	<b>agogue</b>		
		ic		
		o	<b>cracy</b>	
			<b>crat</b>	ic
graph		y		

epidemic

"above"

epicenter  
epitaph  
epidermis  
epilogue

31

en epi pan	<b>dem</b> "people"	<b>agogue</b>		
		ic		
		o	<b>cracy</b>	
			<b>crat</b>	ic
graph		y		

autocracy  
aristocracy  
bureaucracy  
theocracy  
meritocracy  
technocracy

"rule, strength"

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### Help!

- personification
- simile
- metaphor

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### Confusion:

personification  
person

34

chair sales	<b>person</b> "human being, person"	able	
		al	ity
im	i	ate	ing or
		<b>fic</b>	ate ion
		<b>fy</b>	ing

person + i + fic + ate/ + ion → personification

↑  
From Latin <facere>: "make, do"

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### Typical vocabulary instruction: enormous

- Say word
- Write word
- Syllable scoop - e / nor / mous
- Define
- Give examples
- Check understanding

What's the base? e + **norm** + ous !!!!!

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ab e para sub	<b>norm</b> "standard, pattern, model"	al	cy	ate	ion
			ity		
		ize	ed	ing	
			es		
		ate	ive	s	
		ity	es		
		ous	ly ness		

Students know normal, enormous; do not know "norm"

37

ab e para sub	<b>norm</b> "standard, pattern, model"	al	cy	ate	ion
			ity		
		ize	ed	ing	
			es		
		ate	ive	s	
		ity	es		
		ous	ly ness		

I couldn't see this until I consciously shifted my focus. I have to do that with EVERY WORD.

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chair sales	<b>person</b> "human being, person"	able	al	ity		
					ate	ing or
		im	i	<b>fic</b>	ate	ion
				<b>fy</b>	ing	

person      personification      impersonal  
personal      personify      impersonate  
personality      impersonation

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chair sales	<b>person</b> "human being, person"	able	al	ity		
					ate	ing or
		im	i	<b>fic</b>	ate	ion
				<b>fy</b>	ing	

- grammar: person, personal, personify
- compounds
- <facere> → <fic, fy, face, fact>

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**engaged**

The two armies were engaged in battle.  
My cousin got engaged last weekend.

re	<b>mort</b>	<b>gage</b> "pledge"	ed ee es ing ment
dis re	en		

41

a	<b>mort</b> "death"	<b>gage</b>			
		al			
		i	fy		
		ize	ate	ion	
		u	ary	es	

mortal  
mortuary  
mortgage  
amortize  
mortify

"death"  
mort + i + fy  
"make or do"

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natural  
vital  
integral  
oval

mortal → mort + al

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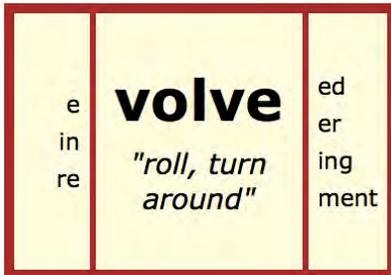
### engaged

The two armies were engaged in battle.  
My cousin got engaged last weekend.



We are **engaged** in word study.  
We are **involved** in word study.

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involved  
involvement  
revolving  
revolver  
evolve

Volvo

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#### Art

Composition, Complementary Color, Hue, Tint, Tone, Foreshortening, Chiaroscuro

#### History

Tenure (from the Reconstruction time period)  
Referendum, Initiative and Recall (political reforms of the Progressive Era)

#### Science

homogenous, energy, concave, convex, wax/wane

#### Mathematics

exponent, numerator, denominator

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### Art: composition

**composition** |,kəmˈpəʊzɪʃən|  
noun

**1** the nature of something's ingredients or constituents; the way in which a whole or mixture is made up: *the social composition of villages.*

• the action of putting things together; formation or construction: *the composition of a new government was announced.*

• a thing composed of various elements: *a theory is a composition of interrelated facts.*

• *severe*: mental constitution; character: *persons who have a touch of madness in their composition.*

• [often as modifier] a compound artificial substance, especially one serving the purpose of a natural one: *composition flooring.*

• Linguistics the formation of words into a compound word.

• Mathematics the successive application of functions to a variable, the value of the first function being the argument of the second, and so on: *composition of functions, when defined, is associative.*

• Physics the process of finding the resultant of a number of forces.

**2** a work of music, literature, or art: *Chopin's most romantic compositions.*

• the action or art of producing a work of music, literature, or art: *the technical aspects of composition.*

• an essay, especially one written by a school or college student.

• the artistic arrangement of the parts of a picture: *spoiling the composition of many of the pictures.*

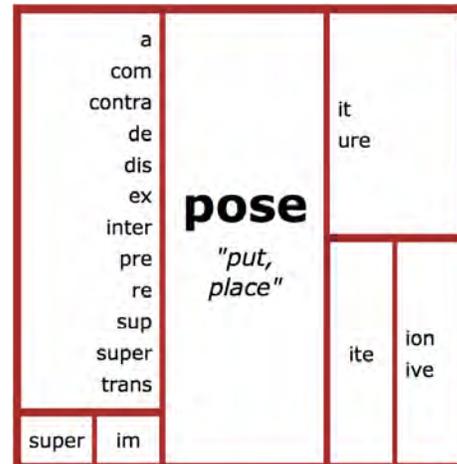
**3** the preparing of text for printing by setting up the characters in order. See **compose** (sense 4).

**4** a legal agreement to pay an amount of money in lieu of a larger debt or other obligation.

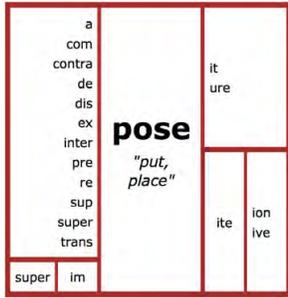
• an amount of money paid under a legal agreement.

Source: Mac dictionary (New Oxford American Dictionary)

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composition:  
art, music, writing  
preposition, appositive:  
grammar

assimilated form of <ad> "to, toward"  
appositive → ap + pose/ + ite/ + ive  
opposite → op + pose/ + ite  
assimilated form of <ob> "against"

Angle of Repose, Wallace Stegner - English literature 49

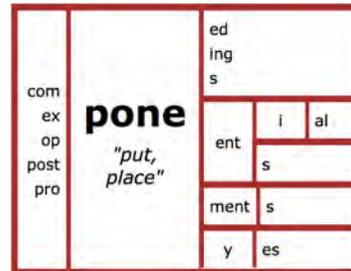


composition:  
art, music, writing  
preposition, appositive:  
grammar  
compose,  
composure: phonology

<s> → /z/  
/ʒ/  
/s/  
/ʃ/

superimpose      deposit  
transposing      composite  
disposable      imposition

Angle of Repose, Wallace Stegner - English literature 51



postponement  
pony  
opposite  
opponent  
math: exponent  
proposition  
proposal  
proponent

exponentially → ex + pone/+ ent + i + al + ly

insect  
sector

prelude  
ludicrous

collage  
collagen

democracy  
epidemic

## Foundational Concepts

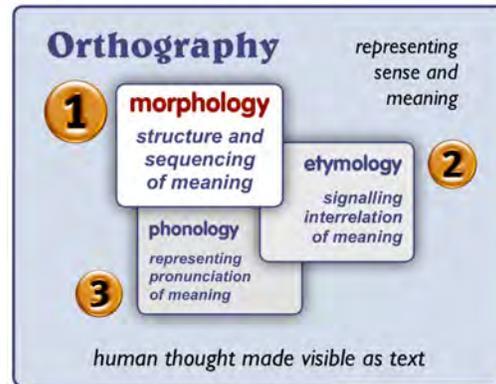
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“...the simple fact is that the present orthography is not merely a letter-to-sound system riddled with imperfections, but, instead, a more complex and more regular relationship wherein phoneme and morpheme share leading roles.”

Source: Venezky, Richard L.  
 “English Orthography: Its Graphical Structure and Its Relation to Sound” in Reading Research Quarterly, Vol 2, No. 3 (Spring 1967) pp. 75-105

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source: realspelling.fr



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## ... from day one...

- It is SO hard to refocus from primacy of sound; “sound → symbol”
  - after YEARS: <enormous> and thousands more....
  - meaning: <personification>
  - spelling - all over the place!!!
- From the beginning — from day one of kindergarten — let’s put phonology in a scientifically accurate framework so ALL words make sense

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## Further Resources

### Further learning:

IDA-UMB conference session on etymology- April 22, 2017, in Plymouth, MN and ONLINE

### Webinars:

All located at IDA-UMB website - <https://umw.dyslexiaida.org/webinars/>

Making Sense of “Irregular” Words – May 2016 - Sue Hegland  
 Insights into “Sight Words” – February 2016 - Gina Cooke, Linguist-Educator Exchange  
 Structured Word Inquiry – February 2015 - Pete Bowers

### Websites:

[www.realspelling.fr](http://www.realspelling.fr) - Go to the Real Spelling Gallery and watch films as a start. All resources and Spellingars are exceptional.

<https://linguisteducatorexchange.com> - Gina Cooke - Read blog posts; LEXinars and products highly recommended.  
<http://www.wordworkskingston.com> - Pete Bowers does wonderful public workshops on using Structured Word Inquiry to investigate the writing system.

<http://www.realspellers.org> - Forums about word investigations; WordWorks newsletters under Resources  
<https://LearningAboutSpelling.com> - Sue Hegland - Stories & information about how English spelling works - will be live by April 3

### Blogs by teachers who are using this in their classrooms:

Mary Beth Stevens - Grade 5 - <http://mbstevens.edublogs.org>  
 Skot Caldwell - Grade 5 - <https://whointheworld.edublogs.org>  
 Ann Whiting - Grade 7 - <https://wordinquiry.wordpress.com>  
 Lynn Anderson - Preschool to Grade 1 - <http://wordsinbogor.blogspot.com>  
 Lisa Barnett - Resource Room - K-5 - <http://barnettsbuzzingblog.edublogs.org>  
 Skot Caldwell (archived) - Grade 1 - <https://smallhumansthinkbig.wordpress.com/author/skotcaldwell/>

### Books:

Henry Marcia K. *Unlocking Literacy: Effective Decoding and Spelling Instruction*  
 Marcia Henry introduces matrices in this book, and talks about integrating morphology into traditional multisensory structured language instruction. She has been talking about the importance of morphology for decades.

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## Questions?

contact me at [suehegland@me.com](mailto:suehegland@me.com)

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