

RESEARCH-BASED READING

Vocabulary from Classical Roots®

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By Lee Mountain

When students learn that the root *vari* means “different or varied,” they have a head start on the meanings of *various*, *variable*, *variety*, and *variation*. When they learn that the roots *vis* and *spect* are connected with “seeing,” they know part of the meaning of *visible* and *envision*, as well as *spectator* and *inspect*. *Vocabulary from Classical Roots®* for grades 4 through 11 offers powerful, research-based instruction on using prefixes, roots, and suffixes to unlock the meanings of new words.

Students benefit greatly from an early start on “rooting out meaning.” Research supports the morphemic analysis of prefixes, roots, and suffixes as an effective way to build vocabulary (Baumann, Edwards, Boland, Olejnik, and Kame’enui, 2003; Mountain, 2005; Cunningham and Allington, 2007). The recognition of even one familiar part of a word can “serve as the key which will unlock the meaning” (Nilsen and Nilsen, 2004, p. 13). For example, the prefix *bi-* (meaning “two”) in *bilingual* contributes to the meaning of the word, as does the root *mot* (meaning “move”) in *motivate*. Therefore, meaningful, high-utility word parts like *bi-* and *mot* are featured in the early books of the *Vocabulary from Classical Roots* series.

It is “at fourth grade and up that words with Latin and Greek roots and affixes begin to appear regularly in children’s reading vocabulary. At this point, it is worthwhile to teach students Latin and Greek stems and affixes for the sake of their word recognition, their vocabulary, and their spelling development” (Temple, Ogle, Crawford, and Freppon, 2005, p. 105).

Vocabulary from Classical Roots is a series of eight books for grades 4 through 11. The Greek and Latin roots presented in the series lead to familiarity with thousands of related words. Each lesson introduces eight to fifteen words derived from two or more classical roots and grouped by themes. Dictionary listings give pronunciations and definitions. Each word is used in a sentence that provides meaningful context. The exercises address synonyms and antonyms, meanings of the words in context, and vocabulary extensions with affixes. The lessons include lists of Familiar Words and Challenge Words related to the featured roots. There are also reviews that include writing and discussion activities. An extensive teacher’s guide, test book, and test generator accompany the student book at each level.

Students meet increasing numbers of multisyllabic words at each grade level. Middle graders may encounter 3,000 to 9,000 words per year that derive part of their meaning from classical roots and affixes (White, Power, and White, 1989). High school students encounter even larger numbers of multisyllabic words, so it is essential for them to see relationships in terms of common roots. *Vocabulary from Classical Roots* shows students these relationships.

Direct Vocabulary Instruction

Research affirms the effectiveness of direct teaching of vocabulary (Stahl, 1999; Biemiller, 2001; Graves, 2006). Focused syntheses of research have added that the direct teaching of specific strategies is especially effective (Blachowicz and Fisher, 2000; Baumann, Edwards, Font, Tereshinski, Kame’enui, and

Olejnik, 2002). In a survey of 123 teachers, including a majority of content-area teachers, 62% reported using specific strategies that involve vocabulary activities (Barry, 2002).

The specific strategy of morphemic analysis is highly recommended. "Make sure students understand how morphemic analysis works so they can disassemble words into parts," say Brozo and Simpson (2007, p. 183). Disassembling and reassembling the meaningful parts of words is also recommended by Edwards, Font, Baumann, and Boland (2004). The lessons in *Vocabulary from Classical Roots* help students deconstruct a word like *interrupt* into the prefix *inter-* (meaning "between") and the root *rupt* (meaning "break"). Then they reassemble the word and combine the meanings of the parts as "break in between."

Students cannot pick up root relationships in polysyllabic words on their own.

The authors of many contemporary teacher-education texts support the direct teaching of classical roots as meaningful segments in words. They even include lists of roots and affixes in their books (Harp and Brewster, 2005, pp. 245–251; Beers, 2003, pp. 315–322; Graves, Juel, and Graves, 2007, p. 131; Gunning, 2005, pp. 257–259; Nettles, 2007, pp. 152–155).

The study of thematically grouped Greek and Latin roots gives students insights into the meanings of words they encounter in literature, use in composition, and meet in their other subjects.

Since very few secondary schools now offer courses in Latin and Greek, direct teaching of classical roots must bridge a language gap. *Vocabulary from Classical Roots* provides an instructional approach to help learners and teachers bridge that gap.

Students cannot pick up root relationships in polysyllabic words on their own. "In part, this is because roots are semi-hidden in words and in part because each word that includes a root has a slightly different meaning

(*aquarium* and *aquaplane* both pertain to water but the meaning of individual words is quite different). Consequently, to develop the ability to strategically use Greek and Latin roots, learners need explicit explanations of them, modeling of how to use them to unlock word meaning, as well as many opportunities to read and write words with them" (Fox, 1996, p. 123). Direct teaching from *Vocabulary from Classical Roots* can supply the explanations and modeling that students need. The books also offer opportunities in every lesson for learners to read and write the featured words.

When students learn classical roots, they "will be able to see meaning in words that are completely new to them. Why? Because they are not really completely new if the reader already understands the parts from which words are built. English is composed of several hundred thousand words, built from a few hundred meaningful parts . . . 65% of English words are made up partly or entirely of prefixes, roots, and suffixes derived from Latin and Greek" (Gunter et al., 2007, p. 219).

Cunningham and Allington (2007) have a term for the most common meaningful parts; they call them the "Nifty Thrifty Fifty Transferable Chunks" (p. 82). The great majority of these transferable chunks are featured in *Vocabulary from Classical Roots*.

Categorizing of Vocabulary by Roots

The meaningful grouping of words is an aid to both learning and memory. If direct teaching is the most important guideline for vocabulary instruction, then categorizing or sorting of words is a close second (Bear, Invernizzi, Templeton, and Johnson, 2004; Cunningham, Crawley, and Mountain, 1983; Brozo and Simpson, 2007). Teachers need to introduce vocabulary in related groups of words to build a schema for instruction. "Roots are taught most successfully in families, such as *microscope*, *periscope*, *telescope*, to illustrate that *scope* means 'see' " (Fry and Kress, 2006). *Vocabulary from Classical Roots* Book 5 uses this very grouping to teach the root *scope*.

The series multiplies the benefits of categorizing by employing many forms of grouping. For example, each lesson features at least two related roots. In Book 6, *audi* as in *audience* and *phon* as in *microphone* are taught in the lesson entitled “Hearing”; likewise, *scrib* as in *scribble* and *graph* as in *biography* are taught in the lesson entitled “Writing.”

In the high school books, the featured roots are clustered around themes, such as “Position.” Since the theme “Position” brings to mind such concepts as “middle” and “following,” the roots for this lesson include *medius* (meaning “middle”) and *sequor* (meaning “to follow”). *Medius* leads to words like *mediate* and *mediocrity*. Some of the words grouped with *sequor* (to follow) are *sequel*, *sect*, and *consequence*. The series associates new words that are derived from a root with familiar words that contain the same root.

This approach helps learners view English as a system in which there are networks of words that can be traced back to a common source. Students find that they can associate a meaningful segment in a familiar word with the same segment in a new word, and can thereby unravel part of the meaning.

Roots as “Vocabulary in Common” for English Language Learners

Today’s schools have the most diverse student population of the century (Dillon, 2006; Au, 2006). That population includes many English language learners (ELLs) who benefit from seeing commonalities between their language and the English language. Classical roots are word parts that many Romance-based languages (French, Spanish, Portuguese, Italian, and Romanian) hold in common. By studying these meaningful parts, students see “the ways in which all language is connected at the level of roots, base words, and affixes” (Gunter, Estes, and Mintz, 2007, p. 217).

ELLs see the connection strongly whenever they spot a cognate—a word in English that is similar to the same word in their first

language (Zarrillo, 2007). For example, the word *dragon* has the same letters in Spanish and English. Some cognates are exactly alike in two languages. “Other cognates are the same in meaning, and similar in spelling ... *transform* in English and *transformar* in Spanish” (Temple et al., 2005, pp. 424–435).

In fact, the English language shares many affixes and roots with Spanish. According to Gunning (2005), “The prefixes *re-* and *sub-* are the same in both languages, and so are the suffixes *-able* and *-ion*” (p. 258). Thus, in the *Vocabulary from Classical Roots* series, fifth and sixth graders learn these specific affixes as well as many others. In the fourth-grade book, students learn the root *famil*, which is connected not only to *family* (Spanish *familias*), but also to the cognates *familiar* and *familiarity*.

The lessons in *Vocabulary from Classical Roots* enable students to develop a useful, transferable technique for making sense of the unfamiliar words they meet in their textbooks and on today’s increasingly important high-stakes tests.

The popular Harry Potter books demonstrate the power of cognates with Latin roots. The books have been translated into Italian and French with no need to find name replacements. “For example, *Lumos!* (from the Latin root *lumen*, *luminis*) is the Harry Potter spell for light. Italian readers quickly understand its meaning because of their word *luminoso*, which means *bright*. French speakers use *lumineux* for what English speakers describe as *luminous*” (Nilsen and Nilsen, 2006, p. 128). *Vocabulary from Classical Roots*, Book E, relates the root *lumen*, *luminis* to *illuminate*, *luminary*, and *luminescent*.

Students learn that some cognates stretch back to the days of the Roman Empire. The English word *species* is derived from the Latin word *species*; it has not changed for more than two thousand years.

Vocabulary Instruction across the Content Areas

In the content areas as well as in the English Language Arts curriculum, the study of thematically grouped Greek and Latin roots gives students insights into the meanings of many new words (Nagy, Anderson, Schommer, Scott, and Stallman, 1989). Though word study has its home in English Language Arts classes, it extends into science, math, and social studies, especially with the roots-based approach that helps students learn specialized terms. In fourth and fifth grade content-area textbooks, “the ability to deconstruct words to ascertain meaning is directly related to a student’s knowledge of roots and affixes” (Frey and Fisher, 2007, p. 90).

“Content subjects in the upper grades are peppered with words built from Greek and Latin roots: *carnivorous*, *democracy*, *multiple*, *polygon*, *document*, *epidermis*, *corpuscle*, and *dogmatic* to mention but a few. You can expect learners who recognize and appreciate the chunks made up of Greek and Latin roots to learn a great many technical terms with relative ease, and to do so with less guidance than their classmates who do not understand the contributions Greek and Latin roots make to English words” (Fox, 1996, p. 123).

Vocabulary from Classical Roots provides materials to help students cope with vocabulary questions on state and national tests and on the SAT.

As far back as O’Rourke’s research (1974) and Jacobson’s model lessons (1998), science educators have been pointing out the value of teaching roots such as *bio*, *geo*, and *tele*. In math, the metric system demonstrates the need for an understanding of *centi* and *milli*, from which students construct the meanings of *centimeter* and *millimeter* (Rubin, 2002). For each content area, there is a core set of roots derived from Greek and Latin. “Since students will likely encounter them repeatedly, the time invested in teaching the meanings of affixes and roots common to the language of the content area is well spent” (Eanes,

1997, p. 389). The lessons in *Vocabulary from Classical Roots* enable students to make sense of the unfamiliar words they meet in all their textbooks and on today’s increasingly important high-stakes tests.

Vocabulary from Classical Roots gives students direct instruction to help them spot meaningful parts and build familiarity with groups of words related to the same root.

Attention to Vocabulary on High-Stakes Tests

The National Council of Teachers of English and the International Reading Association collaborated on standards that have raised the ceiling in all areas of literacy (1996). The standards of the National Assessment of Educational Progress are so challenging that the test shows only about a quarter of students to be proficient-level readers. Nevertheless, Valencia and Wixson (2001) call the standards movement a way to “address the inequities of the past and raise the ceiling for all” (p. 210).

The American Educational Research Association (2000) and the Board of Directors of the International Reading Association (1999) recommend that tests should truly assess what is being taught and that students should have materials to learn what will be tested. *Vocabulary from Classical Roots* provides materials to help students cope with vocabulary questions on state and national tests and on the SAT. The morphemic-analysis approach is especially valuable for SAT words, many of which are derived from Latin and Greek roots.

The standards of McREL (Mid-continent Research for Education and Learning) indicate that students should use their knowledge of word parts and word relationships to determine the meaning of specialized vocabulary (2002). Specialized vocabulary is composed primarily of root words with affixes, words composed of meaningful parts. Nagy and Anderson (1984) estimated that 60% of English words have meanings that can be determined from their parts. *Vocabulary*

from *Classical Roots* gives students direct instruction to help them spot meaningful parts and build familiarity with groups of words related to the same root.

The Teacher's Guide for the Iowa Tests of Basic Skills (ITBS) offers suggestions for improving performance on its vocabulary subtest. Among the suggestions in the ITBS Manual are "Explain origins of words, roots, affixes. Give practice in synonyms and antonyms" (1986, p. 47). *Vocabulary from Classical Roots* uses those suggestions in every book of the series.

Language Gestalts via Classical Roots

Using thematic groupings in vocabulary instruction points up language gestalts, "the words that have been in the language the longest and name the most basic concepts . . . body parts, animals, plants, weather, astronomical and geological formations, numbers, food, clothing, work, and birth and death" (Nilsen and Nilsen, 2003, p. 36). The Nilsens go on to suggest how to teach the vocabulary connected with the basic concept "numbers" in language gestalts; for example, they recommend teaching "about Latin *quartus*, meaning 'four,' from which English gets such words as *quart*, *quarter*, *quarterly*, *quadruped*, *quadruplet*, and *quadrangle*" (p. 35).

Interestingly, the same Latin root *quartus* appears in *Vocabulary from Classical Roots*, Book A, in one of the lessons grouped around the basic theme of numbers. Four of the words to which the Nilsens refer are in the lesson—*quart*, *quarter*, *quadruplet*, *quadrangle*—along with the more specialized terms *quartet* and *quatrain*.

According to the Nilsens (2006), spending class time on frequently used Latin roots is an exceedingly worthwhile practice, since it helps students establish connections. Consider the root *mort* (meaning "death"). Familiarity with this root helps students determine the meanings of such words as *mortified* (embarrassed to death) and *immortal* (undying). The strategy of grouping roots around a theme adds to the effectiveness of categorizing. The "mortified (embarrassed to

death)" theme, exercised in a sentence about the classic novel *Pride and Prejudice*, can be related to the naming of the character who wanted to kill Harry Potter, Lord *Voldemort*. Students learn and remember words that have elements in common (Cunningham, Crawley, and Mountain, 1983), and the meaningful themes in *Vocabulary from Classical Roots* provide strong commonalities.

Progressive Complexity in a Familiar Format

Grade by grade, students show growth in their capacity to derive meaning from familiar roots (Wysocki and Jenkins, 1987). From grades 4 through 11, *Vocabulary from Classical Roots* increases the complexity of its vocabulary program. The books feature eight words per lesson at the beginning of the series and progress to fifteen words per lesson at the upper levels. These are teachable numbers of words, according to Beers (2003).

The definitions are sometimes enhanced with illustrations, sometimes extended with notes, but always enriched by sentences that use the words in context. Many context sentences in the high school books are rich with literary and historical allusions. Stahl's vocabulary research (1999) supports the need for both definition and context to help understand new words.

This approach helps learners view English as a system in which there are networks of words that can be traced back to a common source.

Though the exercises increase in length and complexity through the series, they retain a similar format. At all levels, they focus on synonyms and antonyms, appropriate use of the words in context, and extensions of the featured words—extensions that often feature prefixes and suffixes. In Books C, D, and E (recommended for ninth, tenth, and eleventh grades), additional exercises require students to use featured words in paragraphs. Reviews occur after each two or three lessons.

Throughout the series, students learn multiple forms of each word. For example, in Book

4, forms with inflectional endings (*capture, captured, capturing, captures*) are shown in Familiar Words boxes. At the high school level, when the verb *improvise* is featured, students also meet the noun *improvisation*, the adjective *improvisational*, and the form *improvised* as adjective or past tense verb. In addition, the exercises suggest entertaining writing assignments using words from the lessons. *Vocabulary from Classical Roots* engenders interest in language and skill in the use of words.

The context sentences in *Vocabulary from Classical Roots* are rich with literary and historical allusions.

For each level, there is both a Test Book and a Teacher's Guide with extensive lesson plans. The tests for *Vocabulary from Classical Roots* include many of the same question types students will find on standardized tests: multiple choice, analogies, and sentence completions. Tests in Books D and E (tenth and eleventh grades) also include exercises on authentic passages from literature in which the featured words appear.

In addition to the Test Books, an online Test Generator is available. This handy device allows teachers to quickly and easily customize tests by selecting only those words they wish to test, either from a single lesson or group of lessons. It can also be used to construct alternative forms of tests to preserve test security and/or for retesting purposes. Finally, the Test Generator allows teachers to prepare pre- and post-tests as a basis for differentiating instruction and as a means of documenting learning gains for individual students or the class as a whole.

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The Teacher's Guides provide lessons that introduce roots, preview familiar words derived from those roots, present key words

(including challenge words), and suggest many ways to encourage oral and written use of the words. For example, in a lesson on "Seeing," students first discuss the familiar words *vision, visit, visual* (containing the root *vis*) and *inspect, suspect* (containing the root *spect*). They then examine the key words that start with a root: *spectacle, spectacular, spectator, visible, visor*. Next, they disassemble the key words that have a prefix before the root: *envision, prospect, respect, revise, supervise*. Finally, the lesson also includes the challenge words *visa, visage, visionary, aspect, introspection, specter, and spectrum*.

Throughout the series, students learn multiple forms of each word.

The guided oral practice helps students personalize the key vocabulary words. Students bring in caps with visors and describe spectacular sights they have seen, events at which they have been spectators, compositions they have revised, and prospects for their next school vacation. The exercises provide examples, make connections, and bring discussing, drawing, and/or displaying into every lesson. Reproducible activity masters feature Synonym Tic-tac-toe and Cross-Synonym Puzzles that encourage students to have fun with the words they are learning.

Vocabulary from Classical Roots is a "complete" series for grades 4 through 11. It gives students knowledge of the prefixes, roots, and suffixes they need to figure out most of the new words they will encounter.

Conclusion

Vocabulary is receiving more and more attention in all classrooms "because of the truth in the old adage that 'What gets tested gets taught' " (Nilsen and Nilsen, 2003, p. 31). At each grade level, vocabulary expectations increase. Materials that are read by high school students contain over 100,000 different words (Nagy and Anderson, 1984). Obviously, there is no way to teach all of those words, one by one. But there is a way to teach the morphemic strategy that will

unlock the meanings of thousands of words—the research-proven prefixes/roots/suffixes strategy of *Vocabulary from Classical Roots*.

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