SHELL EDUCATION

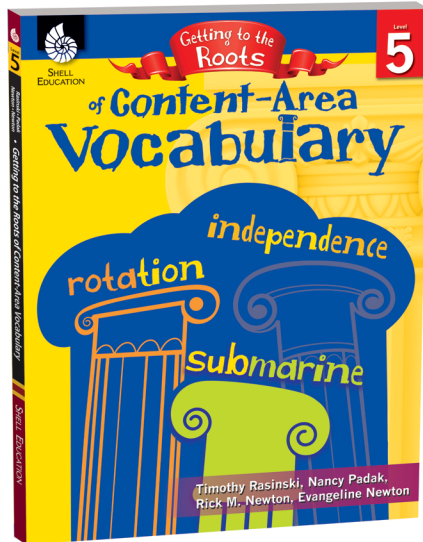# Sample Pages from

Getting to the Roots of Content-Area Vocabulary, Level 5

The following sample pages are included in this download:
- Table of Contents
- Introduction excerpt
- Lesson plan

For correlations to Common Core and State Standards, please visit http://www.teachercreatedmaterials.com/correlations.

Getting to the Roots

of Content-Area
Vocabulary

independence

rotation

submarine

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Content-Area Vocabulary Research and Practice

Content learning is largely conceptual. Words are labels for content-area concepts. Although learning these words is critical to student success, teaching them can be challenging. Asking students to look words up in their dictionaries or glossaries and then to memorize definitions provides, at best, a short-term solution. In this book, we present a systematic and research-based alternative to vocabulary learning: a roots approach. Because most words are defined (and spelled) by what their parts mean, students can expand their vocabularies by learning how words are built from the roots up. Over 90 percent of all academic vocabulary derives from Latin or Greek roots (prefixes, suffixes, bases). Moreover, when new academic words are added to English, they too are often derived from Latin and Greek roots. The logic goes like this: learning roots helps students learn content vocabulary; one root can help students unlock the meaning of multiple words. Knowing content vocabulary helps students comprehend and learn social studies, science, and mathematics.

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The units in this book center on common roots (prefixes and bases) in science, social studies, and mathematics. We present over 15 prefixes and bases that generate over 200 words from content-area vocabulary.

What Does Research Say About Using a Roots Approach?

The size and depth of elementary students' vocabulary is associated with proficiency in reading comprehension. Effective vocabulary instruction results in higher levels of reading comprehension (Baumann et al. 2002; Beck, Perfetti, and McKeown 1982; Kame'enui, Carnine, and Freschi 1982; Stahl and Fairbanks 1986).

Morphological analysis (e.g., via a roots approach) is important because it is generative and allows students to make connections among semantically-related words or word families (Nagy and Scott 2000). In fact, developing morphological awareness is an integral component of word learning for young children (Biemiller and Slonim 2001). In a comprehensive review of 16 studies analyzing the effect of instruction in morphological awareness on literacy achievement, Carlisle (2010) observes that "children learn morphemes as they learn language" (465).

Classroom-based studies have demonstrated the effectiveness of teaching word parts and context clues in the primary and intermediate grades (Baumann et al. 2005; Biemiller 2005; Mountain 2005; Porter-Collier 2010; Baumann et al. 2002; Carlisle 2000; Kieffer and Lesaux 2007). Research in content-area vocabulary has demonstrated the effectiveness of teaching Greek and Latin word roots, especially for struggling readers (Harmon et al. 2005).

Content-Area Vocabulary Research and Practice (cont.)

No single instructional method is sufficient. Teachers need a variety of methods that teach word meanings while also increasing the depth of word knowledge (Blachowicz et al. 2006; Lehr, Osborn, and Hiebert 2004). These methods should aim at fostering:

Immersion

Students need frequent opportunities to use new words in diverse oral and print contexts in order to learn them thoroughly (Blachowicz and Fisher 2006).

Metacognitive and metalinguistic awareness

Students must understand and know how to manipulate the structural features of language (Nagy and Scott 2000).

Word consciousness

Word exploration (e.g., etymology) and word play (e.g., puns, riddles, games) help students develop an awareness of and interest in words (Graves and Watts-Taffe 2002, Lehr et al. 2004).

Content-Area Vocabulary Research and Practice *(cont.)*

What Is a Root?

A *root* is a word part that contains meaning and not merely sound. Roots are vocabulary multipliers—each root taught helps students discover the meanings of multiple words. There are three categories of roots, depending on their placement within a word:

prefix

A root at the beginning of a word. For example, in the word *retraction*, the initial *re-* is a prefix, meaning "back," "again."

base

The core root, which provides a word with its basic meaning. In the word *retraction*, the base is *tract*, which means "pull," "draw," "drag."

suffix

A root that ends a word. In the word *retraction*, the final *-ion* is a suffix, meaning "act of," "state of."

> **Note:**
> The term *affix*, used in the Common Core State Standards, refers to either prefixes or suffixes. *Affix* contains an assimilated form of the prefix *ad-*, which means "to," "toward," or "add to." And the Latin base *fix-* means "fasten" or "stick." So an *affix* is a part of a word "added or fixed to" a base word either in front (prefix) or at the end (suffix).

What Do Prefixes and Suffixes Do?

A prefix serves one of three functions:

- A prefix can *negate* a word by meaning "not." The most common negating prefixes are *un-* (e.g., *unhappy, unwashed*) and negative *in-, im-, il-* (e.g., *invisible, impossible, illegal*). Some directional prefixes can also be negating. For example, the prefix variations *di-, dis-, dif-*, which mean "apart," "in different directions," can also mean "not" (*dis*similar = "not similar," a *dif*ficult task is "not" easy).

- A prefix can be *directional*: it sends the base of a word in a specific direction. The prefix *ex-* means "out," *re-* means "back," "again," *sub-* means "under," "below," and *ad-* means "to," "toward," "add to." For example, an *ex*it sign indicates the way "out" of a building; we *de*scend a staircase when we go "down"; when class *con*venes, it comes "together"; when class is *dis*missed, students scatter "in different directions"; when they *pro*ceed to their buses, they move "forward," "ahead" to their bus stops.

- A prefix can have *intensifying force,* meaning "very," "thoroughly." A *per*fectly baked cake, for example, is "thoroughly" done. Quantitative and numerical prefixes are also intensifying.

A suffix changes the part of speech (e.g., *act, action; swift, swiftly*) or modifies the base (e.g., *fast, faster*).

Content-Area Vocabulary Research and Practice *(cont.)*

Why Teach with a Roots Approach?

Teaching with a roots approach is efficient. Over 60 percent of the words students encounter in their reading have recognizable word parts (Nagy et al. 1989). Moreover, content-area vocabulary is largely of Greek and Latin origin (Harmon, Hedrick, and Wood 2005). Many words from Greek and Latin roots meet the criteria for "tier two" words and are appropriate for instruction (Beck, McKeown, and Kucan 2002).

Root study promotes independent word learning, even in the primary grades (Carlisle 2010). In addition, roots are word multipliers—that is, knowledge of one root can help students determine the meaning, pronunciation, and spelling of 10, 20, or more English words. With roots, students learn to make

> **Latin and Greek word roots follow linguistic patterns that can help students with the meaning, sound, and spelling of English words.**

connections among words that are semantically related (Nagy and Scott 2000). Research suggests that the brain is a pattern detector (Cunningham 2004). Latin and Greek word roots follow linguistic patterns that can help students with the meaning, sound, and spelling of English words. Indeed, Latin and Greek roots have consistent orthographic (spelling) patterns (Rasinski and Padak 2013; Bear et al. 2011).

Young readers' word instruction is often characterized by a study of word patterns called *rimes, phonograms*, or *word families*. A Latin-Greek roots approach is the next logical and developmental step in word learning (Bear et al. 2011). Many English language learners speak first languages semantically related to Latin. For example, more than 75 percent of the words in Spanish come from Latin (Chandler and Schwartz 1961/1991). In fact, Spanish, Portuguese, French, Catalan, Italian, and Rumanian are all classified as "Romance Languages" because they derive from Latin, the language of ancient Romans. Enhancing this natural linguistic connection inherent in many of these languages can accelerate these students' vocabulary growth (Blachowicz et al. 2006).

Many states are beginning to include a study of roots, including Latin and Greek derivations, in their elementary and middle school literacy standards. Indeed, the Common Core State Standards focus extensively on root-specific standards in the "Reading Foundational Skills" and "Language/Vocabulary Acquisition and Use" sections. According to these standards, attention to roots should begin in kindergarten.

How to Use This Book

This book offers three units. Unit I presents two prefixes, two bases, and one suffix for words that appear in social studies. Unit II presents five bases for words that appear in science. Unit III presents two numerical prefixes and three bases for words that appear in mathematics. The following information will help you implement each lesson within the three units.

Lesson Overview

A list of **Standards** (McREL and Common Core State Standards) is included in each lesson.
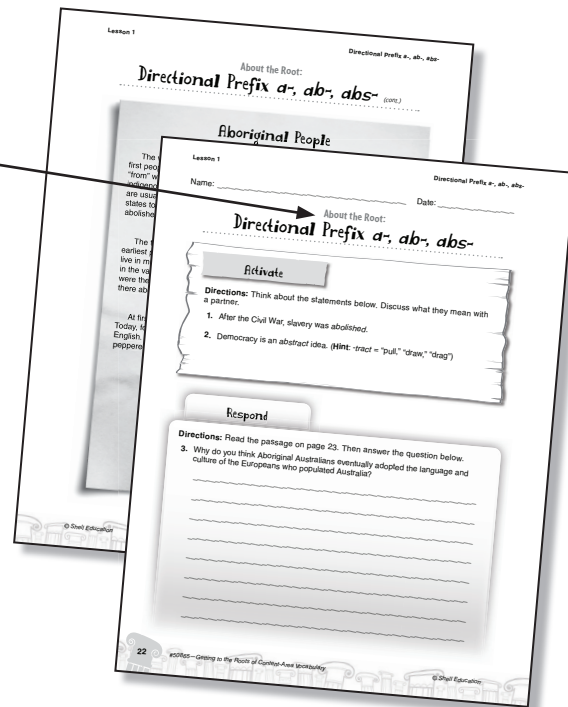
The **Materials** listed include the activity pages for students.
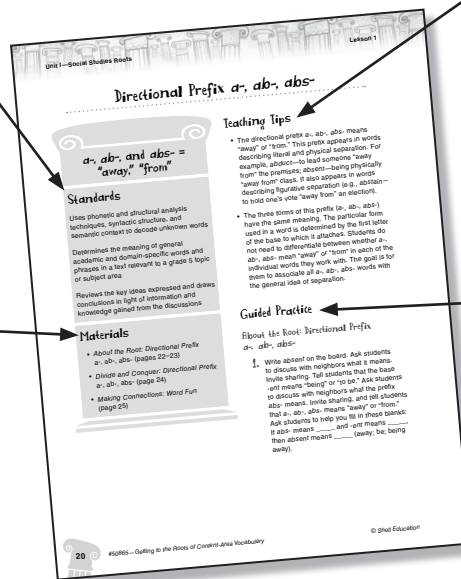
Teaching Tips provide essential information about the root. Reading this section before you teach the lesson will provide you with a foundation to ensure student success.

The **Guided Practice** portion of each lesson includes suggestions for implementing each of the student activity pages.

The **About the Root** activities are introductions and include short passages using the root of focus. The purpose of these passages is to show students contextual use of the root in the content areas. As students read to themselves or listen to the teacher read aloud, they identify the prefix or suffix words in extended texts that center on a wide range of interesting topics.

How to Use This Book (cont.)

The **Divide and Conquer** activities allow students to pull words apart. They dissect the parts of the words, understand the meaning of these parts, and then gain a greater understanding of the word as a whole.

The **Making Connections** activities allow students to use their knowledge of roots to make connections to vocabulary and offer students the opportunity to extend their exploration of the root(s) through activities such as word sorts, riddles, representing the roots and related words in drawings, and gamelike tasks. They may need to distinguish when to use a certain root or which way the root is used in a word.

All of the student activity pages and additional resources can be found on the **Digital Resource CD**.
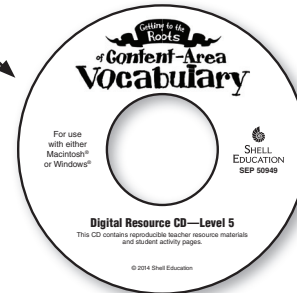
Directional Prefix ad-

ad- = "to," "toward," "add to"

Standards

Uses a variety of context clues to decode unknown words

Uses combined knowledge of all letter-sound correspondences, syllabication patterns, and morphology to read accurately unfamiliar multisyllabic words in context and out of context

Reviews the key ideas expressed and draws conclusions in light of information and knowledge gained from the discussions

Materials

- *About the Root: Directional Prefix* ad- (pages 28–29)

- *Divide and Conquer: Directional Prefix* ad- (page 30)

- *Making Connections: Word Sort* (page 31)

Teaching Tips

- The Latin directional prefix *ad-,* meaning "to," "toward," or "add to," is found in many English words. Students may already know words beginning with this prefix. For example, when we perform *addition,* we "add" one number "to" another. The purpose of an *advertisement* is to draw our attention "to" or "toward" a product.

- This prefix appears in words describing literal and physical clinging "to" something (e.g., *adhesive* tape *adheres* "to" the surface with *adhesion*). It also appears in words describing figurative clinging "to" something (e.g., we *adhere* to a diet by "sticking to" it; we *adhere* to our beliefs when we "cling to" them).

- The prefix *ad-* frequently undergoes the process of assimilation by changing its final *d* into the same consonant as the base to which it attaches: *ad- + fect = affect; ad- + tract = attract; ad- + celerate = accelerate*. This lesson only presents *ad-* words that have not assimilated*.* (For more on assimilation, see pages 8–9.)

- Students do not need to differentiate between whether *ad-* means "to," "toward," or "add to" in each of the individual words they work with. The goal is for them to associate all *ad-* words with the general idea of addition or motion toward.

Guided Practice

About the Root: Directional Prefix ad-

1. Write the prefix *ad-* on the board. Directly under it, write the sentences *The United States and Canada are adjacent countries* and *All citizens must adhere to the laws of the land.*

Directional Prefix ad- *(cont.)*

2. Explain that the base *jac-* means "to lie" and the base *her-* means "to stick or cling." Ask partners to figure out the meaning of the prefix *ad-*. Invite sharing. Stress that *ad-* means "to," "toward," or "add to."

3. Ask students to complete the About the Root pages. They can work individually or with partners. After they have finished, invite whole-group conversation. Students can share answers, talk about the text passage, or generate more words containing the root.

4. After students have discussed the Activate activity, invite whole-group conversation. You may wish to have students write down the shared ideas to revisit at a later time.

Divide and Conquer: Directional Prefix ad-

5. As you guide students through Divide and Conquer, use questions like these to generate discussion about each of the words:

- Where is the meaning of "to," "toward," or "add to" in the word _____?

- Where might you see the word _____?

- Can you think of an example of _____?

- Does _____ have more than one meaning? If so, how are those meanings the same? How are they different?

- How is the word _____ different from the word _____?

- Do you know any other words that begin with *ad-*? How do these words contain the meaning of "to," "toward," or "add to"?

- Does the word have a suffix? (Students respond.) If yes, what does the suffix do? Can you think of other words that have this suffix?

Making Connections: Word Sort

6. Conclude with conversation. The syllable sort choices are either right or wrong, but the "is or could describe a person" sort invites more divergent responses. Ask students to explain their reasoning for their choices.

Words with ad-

adapt	admire
adaptive	admission
add	admit
addendum	admittedly
addition	admonition
additional	adorn
additive	advance
address	advancement
adduce	advantage
adhere	adventure
adherence	adventurer
adhesion	adventuresome
adhesive	adverb
adjacent	adverse
adjective	advertise
adjoin	advertisement
adjunct	advice
admiration	

To print a full list of words for students, see page 149.

Name: _____ Date: _____

About the Root:
Directional Prefix ad-

Activate

Directions: Think about how each italicized word means "to," "toward," or "add to" in the sentences below. Discuss them with a partner.

1. With the *addition* of Alaska and Hawaii in 1959, the United States now has 50 states.

2. In 1990, The Americans with Disabilities Act became law. This law requires reasonable *adaptations* in public buildings, such as wheelchair ramps, for persons with physical disabilities. (**Hint**: *-apt-* means "join" or "fitted.")

Respond

Directions: Read the passage on page 29. Then answer the questions below.

3. Which man had the advantage in the Hamilton/Burr duel? Why?

   _____

   _____

   _____

4. Whom do you think history has treated more harshly? Why do you think so?

   _____

   _____

   _____

About the Root:
Directional Prefix ad- (cont.)

Famous Adversaries—
Alexander Hamilton and Aaron Burr

American history is full of *adversarial* relationships. Indeed, each election has at least two people who are *adversarie*s (*vers-* = "turn"), candidates who "turn" "toward" each other in disagreement and rivalry. However, some *adversarial* situations are more serious than others. In fact, a famous one, between Alexander Hamilton and Aaron Burr, ended in death. Here's the story:

The date and place: July 11, 1804, Weehawken, New Jersey. The characters: Alexander Hamilton, a Founding Father, who was the nation's first secretary of the treasury and Aaron Burr, Thomas Jefferson's vice president. The men had been fighting a "war of words" for years. They disagreed politically, *admonished* one another often, and had several loud and public skirmishes about specific political events.

Hamilton made an address in which he spoke critically of Burr. When Burr found out, he challenged Hamilton to a duel. Several people tried to dissuade the men, but the men would not take others' *advice*. The duel went forth. Each man fired one shot from a dueling pistol. Hamilton was mortally wounded; he died the next day. Burr was charged with murder.
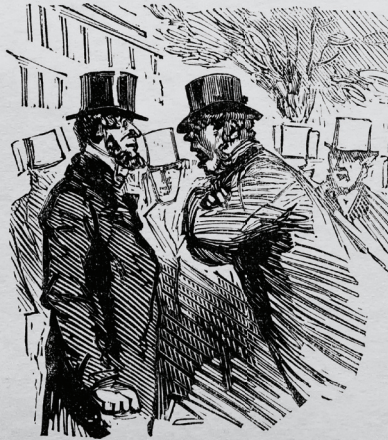
Name: _____   Date: _____

Directional Prefix ad-

Directions: Complete the chart below. If a word does not have a suffix, the chart is marked with *X*. Be sure to use *to*, *toward*, or *add to* in your definitions. Then, write sentences on a separate sheet of paper, using two of the words from the chart. **Hint:** Two words have suffixes. In one case, the suffix makes the word a noun (a person). In the other, the suffix makes the word a verb (an action word).

Word	Prefix Means	Base Means	Suffix Means	Definition
1. adapt		*-apt* = fit	X	
2. admonish		*-mon-* = warn		
3. adhere		*-her* = stick, cling	X	
4. advent		*-vent* = come	X	
5. adversary		*-vers-* = turn		

Name: _____ Date: _____

Word Sort

Directions: Use the words in the Word Bank to complete the chart below. Explain your thinking to a partner.

Word Bank			
adapt	additional	adhesion	advent
adaptive	address	adjective	adversary
addendum	adhere	admonish	

2 Syllables	3 Syllables	4 or More Syllables

Is or Could Describe a Person	Is Not/Could Not Describe a Person	

Describes An Action	Does Not Describe An Action	