EDUCATOR'S PRACTICE GUIDE

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Teaching Academic Content and Literacy to English Learners in Elementary and Middle School

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Institute of Education Sciences

The Institute of Education Sciences (IES) publishes practice guides in education to bring the best available evidence and expertise to bear on current challenges in education. Authors of practice guides combine their expertise with the available findings of rigorous research to develop specific recommendations for addressing these challenges. The authors rate the strength of the research evidence supporting each of their recommendations. See Appendix A for a full description of practice guides.

The goal of this practice guide is to offer educators specific, evidence-based recommendations that address the challenge of teaching English learners in the elementary and middle grades: building their English language proficiency while simultaneously building literacy, numeracy skills, and content knowledge of social studies and science. The guide provides practical and coherent information on critical topics related to literacy instruction for English learners, and is based on the best available evidence as judged by the authors.

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Teaching Academic Content and Literacy to English Learners in Elementary and Middle School

April 2014

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Disclaimer

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Introduction to the Teaching Academic Content and Literacy to English Learners in Elementary and Middle School Practice Guide

Why Update the Earlier English Learner Practice Guide?

Effective Literacy and English Language Instruction for English Learners in the Elementary Grades: A Practice Guide, published in 2007, was the very first IES practice guide developed.[1] This earlier guide focused solely on research conducted up to 2005. As many readers will recall, the major emphasis in education at that time was teaching beginning reading according to evidence-based practice, using a variety of interventions to help students who were likely to struggle. This emphasis on early reading intervention was reflected in *Reading First*,[2] numerous state initiatives,[3] and special education legislation.[4]

As a result, the 2007 English learner practice guide stressed instruction in beginning reading. The guide emphasized types of screening tools that could be used with English learners and the principles that underlie effective literacy interventions for this population, especially in the primary grades. Also addressed in the earlier practice guide were recommendations for vocabulary instruction and peer-assisted learning. The concept of *academic language* was also a recommendation topic, although only sparse evidence was available at that time. As the title notes, the practice guide was geared only toward the elementary grades, with a particular focus on the primary grades.

Significant advances in teaching English learners, and in the broader field of education, have made it possible to update and expand the scope of the original English learner practice guide. The concept of academic language and, in particular, academic vocabulary,[5] plays a large role in the Common Core State Standards for English Language Arts.[6] Researchers and developers have been working on innovative methods to teach both academic vocabulary and content material in science, history, and mathematics to English learners in the context of regular classroom instruction.[7] Writing is another area that is increasingly emphasized, in part because of its large role in the Common Core. Research efforts have also focused on addressing the needs of middle school English learners. The original English learner practice guide was thus updated to correspond with the focus in the field on improving academic vocabulary, writing, and content-area learning of English learners at both the elementary and middle grades. The expertise and experience of the panel charged with writing the updated practice guide reflect the guide's expanded scope.

What Is the Scope of the Updated Practice Guide?

This guide focuses on providing instruction for elementary and middle school English learners—that is, students with limited proficiency in English. The panel has included both students officially designated as *limited English proficient* and those students "redesignated" as fluent in English. The panel has made this decision because most of the

1. Gersten et al. (2007).
2. The *Reading First* program was established under the No Child Left Behind Act of 2001 to improve early reading instruction in schools (U.S. Department of Education, 2009).
3. For example, California Initiative and Texas Reading Initiative.
4. Individuals with Disabilities Education Improvement Act (2004).
5. Academic vocabulary represents a set of words that are used in academic classrooms and text much more often than in everyday social and informal settings. Academic vocabulary words include both general academic words and domain-specific words.
6. National Governors Association Center for Best Practices and Council of Chief State School Officers (2010).
7. For example, **August, Branum-Martin, Cardenas-Hagan, and Francis (2009); Lesaux, Kieffer, Faller, and Kelley (2010); Vaughn et al. (2009).**

recently re-designated students are still learning to speak English at the level of their peers, especially in the area of academic English—the formal English used in schools and texts.

The updated practice guide includes recommendations for teaching English learners in grades K–8. The guide does not address English learners in high school or at the pre-school level. English learners who enter school in grades 9–12 must learn another language and navigate another education system;[8] they face different issues than K–8 students. Likewise, instructional issues in pre-K are very different from those in K–8, and even from those in primary grades (K–2), given the nature of the academic goals in pre-K settings.[9] For these reasons, the panel has chosen to focus on students in the elementary and middle grades.

The guide intentionally focuses on learning in English, as learning academic content in a second language raises issues quite different from learning academic material in a familiar language. For that reason, the panel did not address issues related to learning reading, mathematics, or other academic content in a student's primary language, as is typically the case in bilingual immersion programs and transitional bilingual education programs. However, the panel recognizes that some English learners are educated in bilingual settings and receive literacy instruction in their primary languages in addition to English. Therefore, the recommendations presented here were designed to include the unique instructional relationships that English learners' primary languages may have with their acquisition of academic English. However, regardless of the particular approach a school or district takes toward language of instruction—whether it is dual immersion, structured immersion, or transitional bilingual education—the recommendations articulated in this guide are relevant for English language academic instruction.

8. Francis, Rivera, Lesaux, Kieffer, and Rivera (2006).
9. Diamond, Justice, Siegler, and Snyder (2013).

In particular, the guide focuses on the language and literacy skills English learners need to be successful in school: listening, reading, writing, and speaking in English for academic purposes. The four recommendations in this guide are:

- **Recommendation 1:** Teach a set of academic vocabulary words intensively across several days using a variety of instructional activities.
- **Recommendation 2:** Integrate oral and written English language instruction into content-area teaching.
- **Recommendation 3:** Provide regular, structured opportunities to develop written language skills.
- **Recommendation 4:** Provide small-group instructional intervention to students struggling in areas of literacy and English language development.

These recommendations and practices are based on the currently available research evidence and expert opinion.

Although the recommendations in the practice guide emphasize four specific areas—*academic vocabulary, content-area instruction, writing instruction, and small-group intervention for English learners who are struggling in schools*—many themes (e.g., small-group discussions, use of tools such as graphic organizers) recur across the four sections. This is because in the panel's view, quality language and literacy instruction occurs throughout the school day, across content areas. Thus, the goal of the updated practice guide is to provide teachers with guidelines for (and examples of) systematically—and at times explicitly—building students' English language and literacy, while teaching history, mathematics, science, and other disciplines.

How Does the Updated Guide Differ from the Earlier Guide?

The reader will notice that, on the surface, this practice guide looks quite different from the first edition. When the newly configured panel first met in August 2012, the panel members decided to expand the guide's scope to include the middle school years. The panel also decided to include recommendations on writing and content-area learning, given the emphasis in the Common Core State Standards on the use of complex informational texts and analytical writing activities both at the elementary and middle grade levels.

The guide no longer includes a separate recommendation on universal screening. The panel chose not to pursue the rapidly changing issue of universal screening and formative assessment in this practice guide. Valid and reliable measures in foundational reading skills (i.e., phonological awareness, phonics, and fluency) that can be used to screen English learners efficiently were covered extensively in Recommendation 1 of the 2007 English learner practice guide,[10] and the panel recommends that readers refer to that recommendation if they need information on this topic. This updated guide still addresses screening in Recommendation 4, which deals with small-group interventions for struggling learners, but does not repeat what was done in the earlier version of the guide.

The original guide's recommendation on the discrete topic of vocabulary instruction has been altered here to reflect the growing interest and emphasis on academic vocabulary. The panel feels that *academic vocabulary* is a more focused target for suggestions on how to enhance current practice. This updated guide no longer addresses academic English as a separate recommendation; rather, suggestions on this topic now are offered throughout Recommendations 1, 2, and 3.

Peer-assisted learning, which was a stand-alone recommendation in the earlier guide, is now built into the first three recommendations on academic vocabulary, content-area instruction, and writing. The earlier guide's recommendation on small-group intervention was geared toward primary grades; now, this recommendation has been updated and expanded to include both elementary and middle grades.

In summary, the new version of the practice guide builds on the work of the first practice guide but expands the grade range from K–5 to K–8 and incorporates instruction in mathematics, science, and history/geography, as well as literacy. The updated guide's predominant theme is providing instructional opportunities to enable students to use and practice the English language. All recommendations present specific suggestions for enhancing instruction so that English learners have many more opportunities to speak, listen to, and write about academic topics ranging from literature to science to history in daily classroom instruction.

Thus, it is best to see the updated practice guide as a continuation and expansion of the earlier guide, one that provides ample new material and responds to current issues in the field of education. The earlier guide still serves as a stand-alone document for those interested in literacy and language instruction for the primary grades. Both editions of the guide are likely to be useful for teachers of English learners from the primary grades. However, for those working with students in the intermediate grades and in middle school, the updated guide may be the more useful one.

Who Is the Intended Audience for the Updated English Learner Practice Guide?

The intended audience encompasses a broad spectrum of educators involved in working with English learners: classroom teachers,

10. Gersten et al. (2007).

content-area teachers, special educators, administrators, para-educators, and those involved in professional development, such as instructional coaches.

How Was the Guide Created?

To create this practice guide, the panel considered evidence from rigorous studies of instructional interventions that focused on language and literacy skills needed for English learners to succeed in school. The panel determined which practices to recommend by identifying interventions that were supported by causal evidence. Like most instructional interventions, the interventions in these studies often included multiple instructional components. Consequently, as it was difficult to determine the impact of each individual component, the panel prioritized those components that were common across interventions while making recommendations for this guide. The panel determined the level of evidence for each recommendation by considering the evidence from each study and the number of studies that included the practices (or components) articulated in each recommendation. For some practices, no evidence was available. In these cases, the panel relied on its collective expertise to recommend practices likely to be effective for English learners.

Recommendation 1

Teach a set of academic vocabulary words intensively across several days using a variety of instructional activities.

- Choose a brief, engaging piece of informational text that includes academic vocabulary as a platform for intensive academic vocabulary instruction.
- Choose a small set of academic vocabulary for in-depth instruction.
- Teach academic vocabulary in depth using multiple modalities (writing, speaking, listening).
- Teach word-learning strategies to help students independently figure out the meaning of words.

Recommendation 2

Integrate oral and written English language instruction into content-area teaching.

- Strategically use instructional tools—such as short videos, visuals, and graphic organizers—to anchor instruction and help students make sense of content.
- Explicitly teach the content-specific academic vocabulary, as well as the general academic vocabulary that supports it, during content-area instruction.
- Provide daily opportunities for students to talk about content in pairs or small groups.
- Provide writing opportunities to extend student learning and understanding of the content material.

Recommendation 3

Provide regular, structured opportunities to develop written language skills.

- Provide writing assignments that are anchored in content and focused on developing academic language as well as writing skills.
- For all writing assignments, provide language-based supports to facilitate students' entry into, and continued development of, writing.
- Use small groups or pairs to provide opportunities for students to work and talk together on varied aspects of writing.
- Assess students' writing periodically to identify instructional needs and provide positive, constructive feedback in response.

Recommendation 4

Provide small-group instructional intervention to students struggling in areas of literacy and English language development.

- Use available assessment information to identify students who demonstrate persistent struggles with aspects of language and literacy development.
- Design the content of small-group instruction to target students' identified needs.
- Provide additional instruction in small groups consisting of three to five students to students struggling with language and literacy.
- For students who struggle with basic foundational reading skills, spend time not only on these skills but also on vocabulary development and listening and reading comprehension strategies.

- Provide scaffolded instruction that includes frequent opportunities for students to practice and review newly learned skills and concepts in various contexts over several lessons to ensure retention.

Table 1 below lists the four recommendations and identifies the level of evidence for each. See the next section for more information on the Institute of Education Sciences evidence levels for practice guides.

Table 1. Recommendations and corresponding levels of evidence

	Levels of Evidence		
Recommendations	**Strong Evidence**	**Moderate Evidence**	**Minimal Evidence**
1. Teach a set of academic vocabulary words intensively across several days using a variety of instructional activities.	◆		
2. Integrate oral and written English language instruction into content-area teaching.	◆		
3. Provide regular, structured opportunities to develop written language skills.			◆
4. Provide small-group instructional intervention to students struggling in areas of literacy and English language development.		◆	

Institute of Education Sciences Levels of Evidence for Practice Guides

This section provides information about the role of evidence in the Institute of Education Sciences' (IES) What Works Clearinghouse (WWC) practice guides. It describes how practice guide panels determine the level of evidence for each recommendation and explains the criteria for each of the three levels of evidence (strong evidence, moderate evidence, and minimal evidence).

The level of evidence assigned to each recommendation in this practice guide represents the panel's judgment of the quality of the existing research to support a claim that, when these practices were implemented in past research, favorable effects on student outcomes were observed. After careful review of the studies supporting each recommendation, panelists determine the level of evidence for each recommendation using the criteria in Table 2. The panel first considers the relevance of individual studies to the recommendation and then discusses the entire evidence base, taking the following into consideration:

- The number of studies
- The study designs
- The internal validity of the studies
- Whether the studies represent the range of participants and settings on which the recommendation is focused
- Whether findings from the studies can be attributed to the recommended practice
- Whether findings in the studies are consistently positive

A rating of *strong evidence* refers to consistent evidence that the recommended strategies, programs, or practices improve student outcomes for a diverse population of students.[11] In other words, there is strong causal and generalizable evidence.

A rating of *moderate evidence* refers either to evidence from studies that allow strong causal conclusions but cannot be generalized with assurance to the population on which a recommendation is focused (perhaps because the findings have not been widely replicated), or to evidence from studies that are generalizable but have some causal ambiguity. It also might be that the studies that exist do not specifically examine the outcomes on which the practice guide focuses, although they may be related.

A rating of *minimal evidence* suggests that the panel cannot point to a body of research that demonstrates the practice's positive effect on student achievement. In some cases, this simply means that the recommended practices would be difficult to study in a rigorous, experimental fashion;[12] in other cases, it means that researchers have not yet studied this practice, or that there is weak or conflicting evidence of effectiveness. A minimal evidence rating does not indicate that the recommendation is any less important than other recommendations with a strong or moderate evidence rating.

In developing the levels of evidence, the panel considers each of the criteria in Table 2. The level of evidence rating is determined by the lowest rating achieved for any individual criterion. Thus, for a recommendation to get

11. Following WWC guidelines, improved outcomes are indicated by either a positive, statistically significant effect or a positive, substantively important effect size. The WWC defines substantively important, or large, effects on outcomes to be those with effect sizes greater than or equal to 0.25 standard deviations. See the WWC guidelines at http://ies.ed.gov/ncee/wwc/DocumentSum.aspx?sid=19.
12. For more information, see the WWC Frequently Asked Questions page for practice guides, http://ies.ed.gov/ncee/wwc/Document.aspx?sid=15.

a strong rating, the research must be rated as strong on each criterion. If at least one criterion receives a rating of moderate and none receive a rating of minimal, then the level of evidence is determined to be moderate. If one or more criteria receive a rating of minimal, then the level of evidence is determined to be minimal.

Table 2. Institute of Education Sciences levels of evidence for practice guides

Criteria	STRONG Evidence Base	MODERATE Evidence Base	MINIMAL Evidence Base
Validity	High internal validity (high-quality causal designs). Studies must meet WWC standards with or without reservations.[13] **AND** High external validity (requires multiple studies with high-quality causal designs that represent the population on which the recommendation is focused). Studies must meet WWC standards with or without reservations.	High internal validity but moderate external validity (i.e., studies that support strong causal conclusions but generalization is uncertain). **OR** High external validity but moderate internal validity (i.e., studies that support the generality of a relation but the causality is uncertain).[14]	The research may include evidence from studies that do not meet the criteria for moderate or strong evidence (e.g., case studies, qualitative research).
Effects on relevant outcomes	Consistent positive effects without contradictory evidence (i.e., no statistically significant negative effects) in studies with high internal validity.	A preponderance of evidence of positive effects. Contradictory evidence (i.e., statistically significant negative effects) must be discussed by the panel and considered with regard to relevance to the scope of the guide and intensity of the recommendation as a component of the intervention evaluated.	There may be weak or contradictory evidence of effects.
Relevance to scope	Direct relevance to scope (i.e., ecological validity)—relevant context (e.g., classroom vs. laboratory), sample (e.g., age and characteristics), and outcomes evaluated.	Relevance to scope (ecological validity) may vary, including relevant context (e.g., classroom vs. laboratory), sample (e.g., age and characteristics), and outcomes evaluated. At least some research is directly relevant to scope (but the research that is relevant to scope does not qualify as strong with respect to validity).	The research may be out of the scope of the practice guide.

13. This includes randomized control trials (RCTs) and quasi-experimental design studies (QEDs). Studies not contributing to levels of evidence include single-case designs (SCDs) evaluated with WWC pilot SCD standards and regression discontinuity designs (RDDs) evaluated with pilot RDD standards.
14. The relevant research comprising the evidence for this level may include studies that meet WWC standards, but have small sample sizes and/or other conditions of implementation or analysis that limit generalizability. The relevant research may also include studies that do not meet WWC standards, but support a relation's generalizability and have no major flaws related to internal validity other than lack of demonstrated equivalence at pretest for QEDs. QEDs without equivalence must include a pretest covariate as a statistical control for selection bias. These studies must be accompanied by at least one relevant study meeting WWC standards.

Table 2. Institute of Education Sciences levels of evidence for practice guides *(continued)*

Criteria	STRONG Evidence Base	MODERATE Evidence Base	MINIMAL Evidence Base
Relationship between research and recommendations	Direct test of the recommendation in the studies or the recommendation is a major component of the intervention tested in the studies.	Intensity of the recommendation as a component of the interventions evaluated in the studies may vary.	Studies for which the intensity of the recommendation as a component of the interventions evaluated in the studies is low; and/or the recommendation reflects expert opinion based on reasonable extrapolations from research.
Panel confidence	Panel has a high degree of confidence that this practice is effective.	The panel determines that the research does not rise to the level of strong but is more compelling than a minimal level of evidence. Panel may not be confident about whether the research has effectively controlled for other explanations or whether the practice would be effective in most or all contexts.	In the panel's opinion, the recommendation must be addressed as part of the practice guide; however, the panel cannot point to a body of research that rises to the level of moderate or strong.
Role of expert opinion	Not applicable	Not applicable	Expert opinion based on defensible interpretations of theory (theories). (In some cases, this simply means that the recommended practices would be difficult to study in a rigorous, experimental fashion; in other cases, it means that researchers have not yet studied this practice.)
When assessment is the focus of the recommendation	For assessments, meets the standards of *The Standards for Educational and Psychological Testing*.[15]	For assessments, evidence of reliability that meets *The Standards for Educational and Psychological Testing* but with evidence of validity from samples not adequately representative of the population on which the recommendation is focused.	Not applicable

15. American Educational Research Association, American Psychological Association, and National Council on Measurement in Education (1999).

The panel relies on WWC Evidence Standards to assess the quality of evidence supporting education programs and practices. The WWC evaluates evidence for the causal validity of instructional programs and practices according to WWC standards. Information about these standards is available at http://ies.ed.gov/ncee/wwc/DocumentSum.aspx?sid=19. Eligible studies that meet WWC evidence standards or that meet evidence standards with reservations are indicated by bold text in the footnotes and references pages.

Teach a Set of Academic Vocabulary Words Intensively Across Several Days Using a Variety of Instructional Activities

Many English learners lack opportunities to develop the sophisticated, abstract, academic vocabulary necessary to support reading, writing, and discussion of the academic topics covered in school.[16] (See Exhibit 1.1 for an explanation of academic vocabulary.) This can, and frequently does, lead to struggles with complex texts that are loaded with abstract content and academic vocabulary.[17] The Common Core State Standards for English Language Arts require that students acquire grade-appropriate general academic and domain-specific vocabulary, and use these words accurately.[18] This provides a window of opportunity for English learners and their teachers because building academic vocabulary is now a key part of the core curriculum in most states.

Summary of evidence: Strong

Six studies met WWC standards and found positive effects across a variety of outcomes from the vocabulary, English language, and reading domains.[19] Three of these six studies directly tested the practice articulated in this recommendation and found that it is beneficial to provide intensive instruction on a few select words across several days using a variety of instructional activities.[20] The remaining three studies provide evidence for some of the instructional practices described in this recommendation.[21] As the panel has a high degree of confidence in the effectiveness of the practice described in this recommendation, and as there is no contradictory negative evidence, the panel has assigned a *strong evidence* rating for this recommendation.[22]

16. E.g., August and Shanahan (2006).
17. E.g., August and Shanahan (2006); Nagy and Townsend (2012).
18. E.g., CCSS.ELA-Literacy.L.3.6 and CCSS.ELA-Literacy.L.7.6 (National Governors Association Center for Best Practices & Council of Chief State School Officers, 2010). The Common Core State Standards for English Language Arts defines academic vocabulary as only *general academic words*, while the panel considers both general academic words and discipline-specific vocabulary to be academic vocabulary. However, both the Common Core State Standards for English Language Arts and the panel emphasize the importance of students becoming proficient in both general academic and domain-specific vocabulary. See Exhibit 1.1 for further explanation of the panel's definition of academic vocabulary.
19. All six studies include multi-component instructional interventions.
20. **Carlo et al. (2004); Lesaux et al. (2010); Lesaux, Kieffer, Kelley, and Harris (in press).**
21. **August et al. (2009); Silverman and Hines (2009); Vaughn et al. (2009).**
22. Although students in Grades 3, 4, and 8 were not included in any of the six studies used to support this recommendation, the panel believes results from the six studies apply to students in Grades K–8.

Exhibit 1.1. Academic vocabulary defined

Academic vocabulary represents words that are used primarily in the academic disciplines (science, history, geography, mathematics, literary analysis, etc.). These words are much more frequently used in discussions, essays, and articles in these disciplines than in informal conversations and social settings.

Typically, academic vocabulary is broken into two categories: *general academic* vocabulary and *domain-specific* vocabulary. General academic vocabulary words such as *environment*, *factor*, *exhibit*, *investigate*, *transition*, and *tangential* are used in writing across many academic disciplines. A word's meaning may shift slightly in different contexts, although occasionally the shift is dramatic. For example, the word *factor*, in a mathematical context, refers to the multiplicative relationships between a set of numbers (e.g., 3 and 8 are *factors* of 24). In history, a *factor* is an issue or event that helps explain why something happened (e.g., the USSR's chronic economic problems and its defeat in Afghanistan, both of which are considered factors that helped lead to the country's breakup). Although there is a loose linkage between the two uses of the term (in a sense, 3 and 8 can "create" 24), students clearly need to know that meanings of many academic vocabulary words shift considerably across disciplines.

By contrast, domain-specific academic vocabulary words are unique to a particular academic discipline. Words such as *pi* and *commutative* are linked to mathematics; words like *diode* and *atom* are linked to physics.

How to Carry Out the Recommendation

1. Choose a brief, engaging piece of informational text that includes academic vocabulary as a platform for intensive academic vocabulary instruction.

After selecting the instructional objectives for the lesson, identify content-rich informational material—such as magazine or newspaper articles, letters to the editor, Op-Ed columns, informative or provocative website entries, or brief excerpts from texts or trade books used in the school—for anchoring in-depth instruction in academic vocabulary.[23] The panel believes that choosing accessible, yet content-rich material is fundamental to providing deep instruction in academic vocabulary. This position is also consistent with the Common Core State Standards for English Language Arts, which call for rich informational text to serve as a platform for anchoring instruction about words and structured conversations involving the abstract language of academic disciplines.[24]

Choose a text that[25]

- Is brief, interesting, and engaging for the students;
- Contains a variety of target academic words to focus on;
- Connects to a given unit of study and builds the students' knowledge of a topic;
- Provides sufficient detail and examples for students to be able to comprehend the passage; and
- Contains ideas that can be discussed from a variety of perspectives.

The panel recommends using text at grade level even though some of the students in the class

23. Carlo et al. (2004); Lesaux et al. (2010); Lesaux et al. (in press).
24. National Governors Association Center for Best Practices and Council of Chief State School Officers (2010).
25. Carlo et al. (2004); Lesaux et al. (2010); Lesaux et al. (in press); Silverman and Hines (2009).

may not be able to comprehend such reading material if asked to read independently. Scaffold instruction so that English learners are able to access the language of the text and understand challenging new words. Provide instructional support by reading the text aloud at the start of the lesson, and then facilitate discussion about the words in the text.

See Exhibit 1.2 for sample text that meets the criteria above. Note that the particular text that appears could be used at upper-elementary or middle grades with students who possess a moderate-to-strong level of English language proficiency and varying reading abilities. This short piece on zoos and animal care is both comprehensible *and* likely to engage many of the students in the class. It contains words that are important for understanding the content. It also builds students' knowledge of an important and timely topic: the ethical treatment of animals. This short piece of text provides concrete examples of the key points and issues, and presents several big ideas worthy of discussion, such as the significant quality-of-life cost to animals living in unhealthy confined spaces, and the financial cost of establishing healthy environments for animals. With this underlying dilemma in mind, this piece can serve as a platform for classroom discussion, debate, and/or persuasive writing. Common Core State Standards feature these types of learning tasks at each grade level.

Exhibit 1.2. Example of an appropriate text for academic vocabulary instruction[26]

When you walk into a zoo today, the exhibits look different than they used to look years ago. Before the 1960s, zoos had cages with tile walls and floors. Now, animals in zoos live in more natural environments. For example, instead of enormous gorillas pacing back and forth in cramped cement areas, they play on soft grass and nap in trees. Before, large birds lived in small cages. Now, zoos have large exhibits where birds can stretch their wings and soar from tree to tree. According to zoo design expert Jon C. Coe, these changes often have a positive impact on animals' health and happiness.

Still, creating better living spaces is just one step toward improving the lives of animals that live in zoos. Even in exhibits that look like their natural environments, animals can become bored. According to Coe, boredom can have harmful effects.

"An exhibit may look great, but it isn't doing much for the animal unless it also involves a choice of things to do all day," said Coe. Animals need to be challenged with activities such as looking for food and exploring their surroundings. In fact, some research has shown that giving zoo animals more options and activities promotes good health and lowers the incidence of violent behavior. Today, several zoos have created living environments for their animals that involve the kinds of pursuits that Coe described. For instance, the orangutans at the National Zoo in Washington, DC can travel across the zoo on overhead ropes to visit friends.

Coe recommends more investigation into these types of zoo exhibits and their impact on animal health. With this new pursuit of creating more natural environments in zoo exhibits, he sees a happier and healthier future for many zoo animals.

26. Sample text adapted from material posted on the American Veterinary Medical Association website (see https://www.avma.org/News/JAVMANews/Pages/021201k.aspx).

2. Choose a small set of academic vocabulary for in-depth instruction.

Select a small set of words to use for intensive instruction over the course of several lessons.[27] When students are taught a large number of words in a day, they often develop only a shallow understanding of a word's meaning that is rarely retained later.[28] By teaching in depth a smaller set of words useful to a student throughout school, teachers will have time to help students learn concepts and nuances associated with a given word, and students will have time to practice using words through writing, speaking, and listening activities in the classroom.[29]

The panel suggests choosing a small set of words—perhaps five to eight words from the selected text—for instruction over the course of several lessons. The exact number of words will depend on your students' age/grade, the length of the text, and the amount of time you will devote to this selection. However, selecting more than 10 words for intensive instruction is likely to be counterproductive, as sufficient time will not be available to teach the selected academic vocabulary deeply and meaningfully. (Please note that in the view of many researchers, students should also be exposed to large numbers of words through wide reading and language-rich environments; however, such wide exposure by itself is not sufficient to address English learners' vocabulary needs.)[30]

Attend to the following six criteria when choosing words to teach. Not all of the criteria need to apply to each word you choose for instruction.

Words central to understanding the text.[31] Choose words that are important for understanding the text. Excerpts from curricular material are likely to include some words that have been bolded by the publisher because they are important for understanding the text. While selecting words to teach, attend to these bolded words as well as un-bolded words, since the latter may also be important for understanding the text.

Words frequently used in the text.[32] Academic words that appear frequently in a text are particularly important to target, as these provide the student multiple opportunities to encounter the word in use within the given text.

Words that might appear in other content areas.[33] Choose words that students may encounter in multiple content areas. Understanding these words will help them access the content of texts from other content areas.

Words with multiple meanings.[34] Words that have multiple related meanings across a variety of domains are useful for instruction. For example, in science and mathematics, *volume* refers to the amount of space an object occupies, while in English language arts, *volume* refers to a book or to a book in a series of books. Instruction targeting words with multiple meanings is useful because it provides important definitions and helps students understand how words function in different contexts.

Words with affixes.[35] Words that can be altered by adding prefixes and/or suffixes allow teachers and students to attend to how word parts change a root word's meaning or grammatical form (i.e., how word parts cause morphological change). For example, adding the prefix *un-* to the word *fortunate* changes the word's meaning, whereas adding the suffix *-ed* to *meander* changes it from present to past tense.

27. Beck, McKeown, and Kucan (2002); **Carlo et al. (2004); Lesaux et al. (2010); Lesaux et al. (in press).**
28. **Lesaux et al. (2010).**
29. **Carlo et al. (2004); Lesaux et al. (2010); Lesaux et al. (in press).**
30. Biemiller (2005); Graves (2000, 2006); Stahl and Nagy (2006).
31. **August et al. (2009); Lesaux et al. (in press); Silverman and Hines (2009).**
32. **August et al. (2009); Carlo et al. (2004); Lesaux et al. (2010); Lesaux et al. (in press).**
33. **Carlo et al. (2004); Lesaux et al. (2010); Lesaux et al. (in press).**
34. **Carlo et al. (2004); Lesaux et al. (2010); Lesaux et al. (in press).**
35. **Carlo et al. (2004).**

Cross-language potential.[36] Words that have cognate relationships across languages (e.g., *investigación* and *investigation*) are often a good way for students to learn new words while improving their confidence in doing so. Not all languages lend themselves to cross-language connections. Spanish, Portuguese, and other Romance languages will be easier than others for students to connect to English.

See Exhibit 1.3 for an example of how Ms. Gomez used these criteria to select academic vocabulary for the text presented in Exhibit 1.2. Note that all the words selected by Ms. Gomez meet at least two of the selection criteria listed above.

Exhibit 1.3. Ms. Gomez's selection of academic vocabulary for in-depth instruction[37]

Ms. Gomez, a third-grade teacher, read the zoo text to determine what academic vocabulary words she should consider for in-depth vocabulary instruction. As she read the text, she noticed that two of the words were familiar to her students: *natural* and *design*. She planned to remind her students of their meaning prior to reading the text. She looked at the word *incidence* and decided not to teach it in-depth but instead to let the students determine its meaning using context clues. She decided to provide brief student-friendly definitions (or synonyms) and demonstrations for the words *cramped*, *boredom*, and *violent* during the reading discussion. She then proceeded to select six words from the passage for in-depth instruction using the criteria. Below is the list of words she selected along with her rationale for selecting them.

Environment. This word can be used in multiple ways (the *environment* as the sum of ecological influences, such as climate, soil, and other life forms, versus an *environment* as one's surroundings or conditions), has morphological derivations (e.g., *environmental*), and also appears more than once.

Exhibit. This word is crucial to text comprehension and has related morphological variants (e.g., *exhibition*). In addition, it has morphological derivations that change the word's part of speech (e.g., *exhibit* as a noun or a verb, and the derivation *exhibition* as a noun), and appears multiple times.

Investigation. While this word only appears once in the text, it offers potential for multiple uses across the content areas (e.g., *investigation* as in conducting a systematic scientific experiment or as in conducting a criminal inquiry). The morphological variants (e.g., *investigate*, *investigator*) and the cross-linguistic dimensions (e.g., *investigación*) make the word a strong candidate for instruction.

Impact. This word is central to understanding the selection, appears twice in the text, has cross-linguistic dimensions (e.g., *impacto),* and has the potential to appear in other content areas (e.g., science: the impact of the moon on tides).

Pursuit. This word appears twice in the text and is important for comprehending the conclusion. Additionally, idiomatic expressions (e.g., *in hot pursuit*) extend the word's usage beyond its applicability in this particular context.

Options. This word has morphological (e.g., *optional*) and cross-linguistic associations (e.g., *option* = *opción* in Spanish, *opção* in Portuguese, and *opsyon* in Haitian Creole).

36. **Carlo et al. (2004).**
37. Based in part on intervention materials used in **Lesaux et al. (2010).**

Students' lack of familiarity with words is not always a sufficient reason for selecting words for in-depth instruction. The goal is to choose unfamiliar words that are central to understanding the passage and/or meet the other criteria for selecting words. For instance, Ms. Gomez did not select some words for in-depth instruction from the zoo text even though some of her students may have been unfamiliar with them. Instead, she chose to focus on giving her students a thorough understanding of the words listed in Exhibit 1.3 and to clarify the meanings of other words quickly and as needed.

3. Teach academic vocabulary in depth using multiple modalities (writing, speaking, listening).

Providing students with opportunities to experience the new academic vocabulary in multiple ways is likely to make these new words an integral part of students' listening, speaking, reading, and writing. The goal of instruction is for students to understand the connotation of the words (i.e., how a word is typically used), an understanding that goes well beyond memorizing definitions or learning about word meanings in a very shallow way.[38] For example, in a standard dictionary, the word *vociferous* is defined as *crying out noisily*. Conversely, a student-friendly definition describes *vociferous* as follows: *People who are vociferous speak with determination because they want their views and beliefs to be heard.* When we use the word *vociferous*, the connotation is of a person or people who are passionately expressing their views and beliefs. Because the first definition is vague and general, it does not convey the word's connotation.

The list below includes several instructional activities that will promote students' deep knowledge of the target academic words. The suggested activities range from providing explicit teacher instruction to planning practice activities in an environment in which students can talk and write about the words they learn.[39]

Activities for Explicit Instruction

To help students gain a deeper understanding of the target words, explicitly teach using student-friendly definitions, examples, non-examples, and concrete representations of the target words.[40] Student-friendly definitions are written to be more accessible than most dictionary or textbook definitions. Examples and non-examples help to clarify and pinpoint the word's meaning, while concrete representations (e.g., pictures, diagrams, video clips)[41] help to bridge the gap and make the connection between language that represents abstract concepts and examples that are more tangible or concrete.

Provide student-friendly definitions of the target academic words and apply these definitions to the context of the text.[42, 43] For example, for the word *pursuit* from the sample text on zoos (Exhibit 1.2), provide a student-friendly definition such as *working toward something important*. Then anchor this word in the zoo text material by explaining how the zoo administrators were working toward something important, using the phrase *like the zoo administrators in their pursuit of creating more natural animal habitats*.

Explicitly clarify and reinforce the definitions using examples, non-examples, and concrete representations.[44] Clarify the meaning of target academic words by having students complete graphic organizers such as the word map presented in Exhibit 1.4. Word maps are very useful in supporting students as they begin

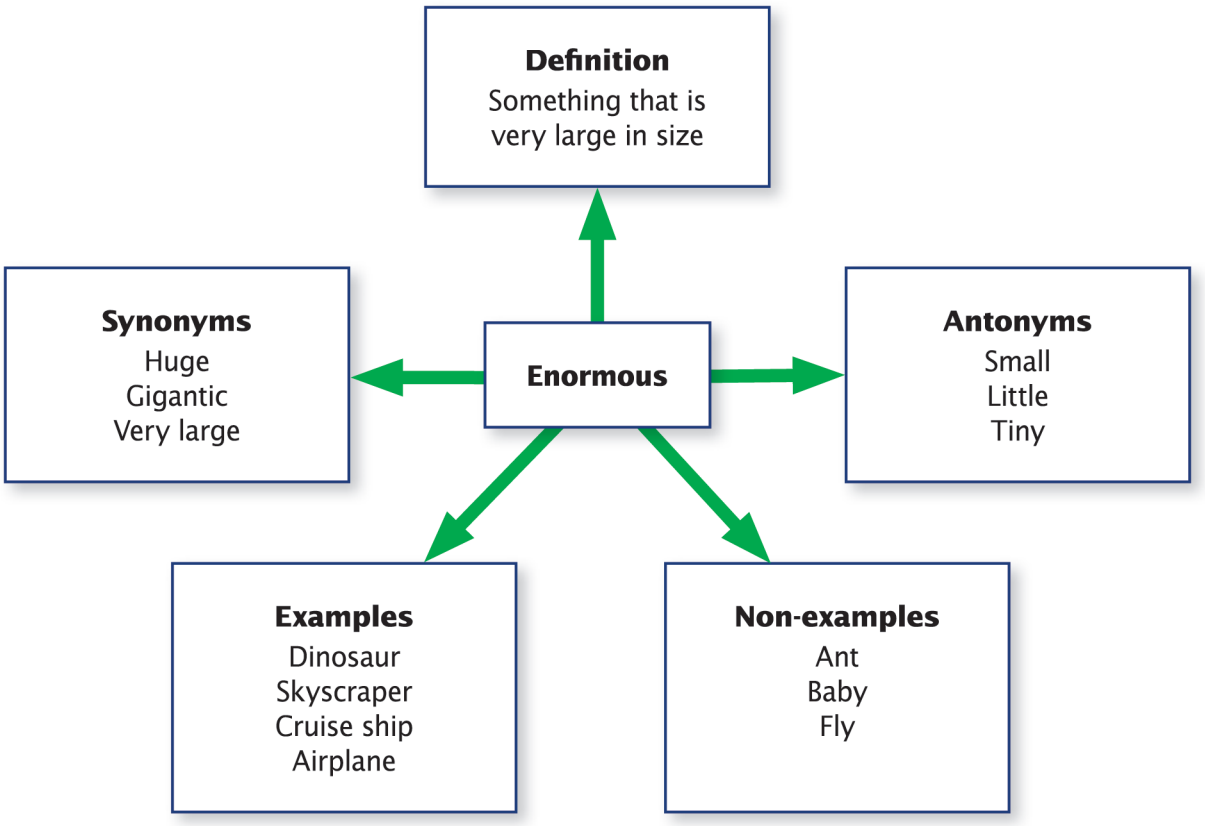
38. Carlo et al. (2004); Lesaux et al. (2010); Lesaux et al. (in press).
39. August et al. (2009); Carlo et al. (2004); Lesaux et al. (2010); Lesaux et al. (in press); Silverman and Hines (2009); Vaughn et al. (2009).
40. Beck et al. (2002).
41. August et al. (2009); Lesaux et al. (2010); Lesaux et al. (in press); Silverman and Hines (2009); Vaughn et al. (2009).
42. August et al. (2009); Carlo et al. (2004); Lesaux et al. (2010); Lesaux et al. (in press); Silverman and Hines (2009); Vaughn et al. (2009).
43. Student-friendly definitions are available on some public websites.
44. August et al. (2009); Beck et al. (2002); **Lesaux et al. (2010); Lesaux et al. (in press); Silverman and Hines (2009); Vaughn et al. (2009).**

to solidify their word knowledge. Remember to model how to complete the graphic organizer, and provide guided practice before asking students to complete them independently in pairs or small groups.

See Exhibit 1.4 for an example of a completed word map developed in a first-grade class for the word *enormous*. Synonyms, antonyms, examples, and non-examples help pinpoint and reinforce the definition of the word *enormous*. It is important to use both examples and non-examples to clarify student understanding of words. For instance, a dinosaur, a skyscraper, a cruise ship, and an airplane are all examples of the word *enormous* as they help illustrate something that is very large in size. Providing students with examples of things that are not very large in size, such as an ant, a baby, or a fly, helps reinforce student understanding of the word *enormous*. These examples (ant, baby, fly) that illustrate what the word does not mean are referred to as non-examples. In essence, non-examples do not exemplify the qualities, characteristics, or features of a given word's meaning. To help students generate non-examples, choose an antonym for the target word—in this case, *tiny*—then, choose an example for that antonym (e.g., an *ant* is an example of something *tiny*). Explicitly explaining this process to students—and supporting them to actively engage with it—can be helpful.

When possible, reinforce the word's meaning using concrete representations such as pictures, gestures, and actions. For example, for the word *enormous*, teachers can use pictures of skyscrapers, dinosaurs, and airplanes and contrast them with an object students are familiar with in order to help them see the difference in scale. Teachers may also be able to explain that *enormous* need not apply only to the size of objects. A catastrophe such as a tsunami, or an outpouring of grief over the loss of a loved one, can also be enormous.

Exhibit 1.4. Word map



Additional Activities to Promote Word Learning

After explicitly teaching the target academic words, choose activities similar to those explained below to give students an opportunity to interact with and promote their deep processing of the words' meanings. It is important to vary the activities to give students different types of experiences with the words and to keep them interested.

Provide opportunities for students to respond to questions where they have to show their understanding of subtle differences in usage and meaning.[45] For instance, in Exhibit 1.5, the instructional example depicts an activity for students in which the teacher presents two sentences that highlight two different meanings of the same word, *exhibit*. Students match the word's correct definition to each sentence. Specifically, in sentence 1, *exhibit* is a noun, indicating a display, presentation, or demonstration, while in sentence 2 *exhibit* is a verb, indicating when a person shows a particular behavior. Instances such as these provide an opportunity to draw students' attention not only to different meanings carried by the same word but also to how the syntax provides context for a word's meaning.

Exhibit 1.5. Sample activity for clarifying words with multiple meanings[46]

Definitions for the word exhibit

1. The *exhibit* we saw at the zoo really helped us understand how animals play together.
2. After coming back from our trip to the zoo, some of us *exhibited* anger and sadness at the way that animals were being treated.

Question: Which definition goes with each sentence? Explain why.

Exhibit: to show or express feelings

Exhibit: a show or display that is meant for a lot of people to see

Generating open-ended questions that tap critical thinking is also useful in determining student understanding of the multiple ways in which the word *exhibit* can be used. For example, "If you saw an *exhibit*, would you have been at a museum or at the movies? Explain your answer."

Facilitate structured discussions to increase opportunities for students to talk about academic words.[47] Always anchor these discussions around the topics that are present in the text and that do not have a clear-cut right or wrong answer. The goal is for students to learn to articulate a position or point of view and learn to defend their perspective or analysis. When students develop support for their position or perspective, always encourage them to find evidence in the text. This point is heavily emphasized in the Common Core State Standards.[48] For example, with the zoo text, the teacher can hold a structured discussion about the pros and cons of zoos, in which students are encouraged to use the target academic words they have just learned. Students could discuss the pros and cons of different options that could make zoos more or less restrictive for animals. Another way

45. Carlo et al. (2004); Lesaux et al. (2010); Lesaux et al. (in press); Silverman and Hines (2009).
46. Based on the intervention materials used in **Lesaux et al. (2010).**
47. Lesaux et al. (2010); Lesaux et al. (in press); Vaughn et al. (2009).
48. E.g., CCSS.ELA-Literacy.R1.5.1 and CCSS.ELA-Literacy.R1.7.1 (National Governors Association Center for Best Practices & Council of Chief State School Officers, 2010).

to facilitate students' use of the target academic words is by having them share relevant personal experiences related to these words (e.g., *describe the type of exhibit that you think will make the animals happier*; *describe a time when you were given an option to do something*; *describe other environments in which animals live*).

Require students to use the target academic words in their writing activities.[49] Writing activities can and should be of different lengths and levels of specificity. They can range from a one-sentence response to a brief paragraph summarizing what students read, or even to an essay comparing zoo environments with environments where pets live. For example, when teaching the zoo text to younger students, give short writing tasks that require students to respond in one to two sentences to a given prompt, such as "Which type of zoo would you rather visit and why?" For older and/or more sophisticated students, an example of an appropriate prompt might be as follows: "If you were visiting a zoo, would you rather see animals *exhibited* in a natural *environment* or in a caged *environment?"* In this way, the target academic words will become a part of the students' writing vocabulary.

Engage students in activities that will increase exposure to and experiences with the word.[50] Activities such as crosswords, charades, sketching, and drawing to represent word meanings can help increase exposure to and experience with target academic words. These vocabulary activities are also useful for cumulative review of words that were previously taught. If not overused, these activities can be interesting and engaging for students.

4. Teach word-learning strategies to help students independently figure out the meaning of words.

In addition to providing direct instruction on academic vocabulary words (see above for methods to do so), teach students to **independently** figure out the meaning of unknown words by using context clues,[51] word parts (morphology),[52] and cognates.[53] This is likely to increase students' understanding of how words work and also provide them with a means by which they can figure out the meaning of unfamiliar words (such as *cramped* and *boredom*), especially while reading independently. Students will encounter a large number of new words as they progress through school, and it is just not possible to provide in-depth instruction for all academic vocabulary words that students do not know.

Context clues help students derive personal, yet workable definitions of words using the surrounding text that they understand. In the text on zoos (Exhibit 1.2), the word *environment* is used several times and is surrounded by context clues in the form of examples (e.g., *a natural environment for a gorilla has grass and trees, while an unnatural environment is a cramped cement area*). A general strategy for teaching students how to determine a word's meaning from the context in which it is used is for students to read the sentence that contains the unknown word and determine whether the sentence includes any information that will help them define the word. If not, students can then read the sentences before and after the sentence with the unknown word, looking for information that will help them figure out the word's meaning. As with any new strategy, model each step using a think-aloud that makes the thinking process

49. Lesaux et al. (2010); Lesaux et al. (in press).
50. Carlo et al. (2004); Lesaux et al. (2010); Lesaux et al. (in press).
51. Carlo et al. (2004); Lesaux et al. (2010); Lesaux et al. (in press).
52. August et al. (2009); Carlo et al. (2004); Lesaux et al. (2010); Lesaux et al. (in press).
53. August et al. (2009); Carlo et al. (2004); Lesaux et al. (2010); Lesaux et al. (in press).

public. For example, when teaching the word *environment*, think aloud by explaining how the sentences around the word *environment* help determine the word's meaning. Provide guided practice before asking students to implement the strategy independently. During guided practice, ask students to think aloud by explaining how the context helped them to figure out the word's meaning.

Word parts represent another way in which students can determine an unknown word's meaning, by focusing on prefixes, suffixes, and root words to find familiar patterns in unfamiliar words. Teach students how to use word parts to ascertain a word's meaning by having them look for the root word and determine whether they know its meaning. Using word parts can also be combined with using context clues, in that good readers first use word parts to make a prediction about a word's meaning and then use context to confirm that prediction. See Exhibit 1.6 for a sample lesson by Ms. Ambrosi, who is teaching her students to determine the meaning of the word *unreachable* using word parts. Note how Ms. Ambrosi thinks aloud as she models the task to her students.

The panel recommends planning learning tasks that provide students with opportunities to apply and review what they are learning. For instance, to provide more practice in using a word's various morphological forms, have students revise sentences from the original text by including a different form of the root word. See Exhibit 1.7 for an example of how students rewrote sentences from the zoo passage (Exhibit 1.2) using another form of the root word, *without* altering the sentences' meanings.

Cognates are words in two or more languages that share a common origin and help English learners link English words to their primary languages. For example, in Spanish, *electricidad* means *electricity* and *organismo* means *organism*. The similarities are apparent, but it is useful to show students how they can determine an unknown word's meaning by looking for similarities between the unknown word and parts of the word or the whole word in their primary language. Over time, identifying these similarities may help students understand unknown words' meanings on their own. Be aware, though, that for a cognate to be useful, students will need to have encountered the word in their primary language and know what it means.

There are also false cognates, or words that look similar in two languages but have different meanings; students should learn how to determine when the apparent similarity is deceptive. For example, the Spanish words *embarazada* and *fábrica* may be mistaken as cognates for the English words *embarrassed* and *fabric*. However, the English translation of *embarazada* is *pregnant*, while that of *fábrica* is factory. Therefore, if the set of words being taught includes cognates, be sure to prepare ahead of time to determine whether or not those cognates are false cognates.[54] It can be helpful to have students review the false cognate in the context of the sentence or paragraph it occurs in so that they can see why the false-cognate definition does not fit. The panel believes it is important to let students know that they may need to use more than one strategy to figure out a word's meaning, or that using several strategies may help them to better understand the word's use. For example, if students cannot determine a word's meaning using context clues, they can try by analyzing the parts of the word. At other times, they might have to use a combination of strategies to determine a word's meaning. For example, in the sample text on zoos (Exhibit 1.2), the meaning of the word *overhead* can be determined using both word parts and context clues. Here, both the word parts (*over* and *head*) and the context (a word that describes ropes that orangutans can use to travel) are useful for inferring the word's meaning.

54. Lists of cognates and false cognates are available on some public websites. (Spanish, Portuguese, and other Romance languages lend themselves more easily for cognate instruction owing to their common Latin origin.)

Exhibit 1.6. Ms. Ambrosi's lesson on using word parts to understand word meaning

Ms. Ambrosi writes the word *unreachable* on the board. She tells students that the first thing she is going to do is to see whether she can find a root word. She breaks the word into three parts by drawing lines: *un/reach/able*. She illustrates that after removing those affixes they are left with the root word *reach*. She defines *reach*. She then calls on students to explain the meaning of the prefix *un-* (i.e., not) and the suffix *-able* (i.e., being capable of doing something) that they have already learned. Finally, she integrates the meaning of the root word and the affixes. She tells her students, "*Reach* means moving your hand or arm to try to touch or grab something. *Able* means you can do something. Then, the meaning of *reach-able* is that you can touch or grab something. When we add the prefix *un-* which means *not*, it changes the meaning of the word to *not being able to touch or grab something*. So, if I were trying to change a light bulb on the ceiling without a ladder, it would be *unreachable*."

Ms. Ambrosi continues by applying the procedure to other meanings of *reach* (e.g., reaching a destination, reaching someone, reaching an agreement). In addition to teaching the meaning of the academic word *unreachable* using the word parts, Ms. Ambrosi also discusses the word's morphological forms (i.e., reach, reachable, unreachable) in terms of their syntactical structure (i.e., noun, verb, adjective, adverb). The students then record the morphological forms according to their part of speech and function in sentences in their graphic organizer (presented below).

VERBS (Action)	**NOUNS** (Person, Place, Thing, or Idea)	**ADJECTIVES** (Words to Describe Nouns)	**ADVERBS** (Words to Describe Actions)
Investigate	Investigation Investigator	Investigative	
Exhibit	Exhibit Exhibition		
Environment	Environment	Environmental	Environmentally
Pursue	Pursuit	Pursuant	
Opt	Option	Optional	Optionally
Reach	**Reach**	**Unreachable** **Reachable**	

Exhibit 1.7. Rewriting sentences using different forms of the root words

Sentence from the Original Text	Rewritten Sentence
Coe recommends more investigation into these types of zoo exhibits and their impact on animal health.	Coe recommends that scientists investigate types of zoo exhibits.
When you walk into a zoo today, the exhibits look different than they used to look years ago.	When you walk into a zoo today, the exhibitions look different than they used to look years ago.
In fact, some research has shown that giving zoo animals more options and activities promotes good health and lowers the incidence of violent behavior.	In fact, some research has shown that giving zoo animals more optional activities promotes good health and lowers the incidence of violent behavior.

Putting It All Together

Exhibit 1.8 incorporates the four *How-to* steps described in this recommendation into a lesson cycle to teach a small set of academic vocabulary words in depth.

Exhibit 1.8. Sample lesson cycle to teach a small set of academic vocabulary words in depth[55]

Ms. Hunter's Fifth-Grade Lessons Focused on Academic Vocabulary

Day 1: Read and Discuss Text and Present Target Academic Words

To begin, Ms. Hunter prepared her students to comprehend the text by facilitating a discussion of students' personal experiences and perceptions of zoo animals and by familiarizing students with the notion that zoo designs have changed to improve the lives of the animals in captivity. Then, she read aloud the zoo text presented in Exhibit 1.2, stopping intermittently to ask clarifying questions or add comments that would help the students understand the text. After reading the text, Ms. Hunter facilitated dialogue around the ethical treatment of animals and encouraged her students to suggest animal activities that could be built into new zoo exhibits. Finally, she introduced the target vocabulary words she had selected for her class (i.e., *pursuit*, *option*, *impact*, *exhibit*, *investigation*, *environment*) by reading each word, locating it in the text, and posting a list of the words in the classroom.

55. Adapted from **Lesaux et al. (2010).**

Exhibit 1.8. Sample lesson cycle to teach a small set of academic vocabulary words in depth[55] *(continued)*

Day 2: Develop Student-Friendly Definitions of Target Words

Ms. Hunter asked the students to individually write what they already knew about the target words. She guided them to think about times they have heard or seen the word before, including the zoo text read on Day 1. Then, as a whole group, Ms. Hunter and her students examined student-friendly dictionary definitions of the target words. As her class worked through these dictionary definitions, Ms. Hunter made a point to continually reference the zoo text the class read on Day 1, asking clarifying questions or adding comments that would help students connect the definitions with each word's usage in the text. After reviewing these definitions, students compared what they knew about the target words to the dictionary definitions and composed their own personal definitions.

For example, when asked to write what they knew for the word *pursuit*, some students wrote

- What animals do in zoos
- Trying to get happiness: Pursuit of happiness
- Trying to find

The student-friendly dictionary definition of *pursuit* that was reviewed by the class was

> *Pursuit* (noun) 1. The act of trying hard to achieve something. *After winning the first playoff game, our team continued our pursuit of the championship.* 2. The act of following or chasing someone or something. *My dog is in pursuit of my neighbor's cat as it runs across the street.* 3. An activity, hobby, or interest. *Mario spends most of his free time on outdoor pursuits like riding his bike and playing football.*

A student's personal definition of *pursuit* was

> *Pursuit*: trying your best to get something or be somebody. Or, stuff you do.

Day 3: Provide Opportunities to Use Words When Speaking

Ms. Hunter had her students work in pairs to discuss responses to questions about the zoo text. Sample questions presented to the students included:

- Why does Coe want zoo animals to have more activity *options*?
- How can zoos improve their *exhibits*?

Ms. Hunter then called on some students to share their answers with the whole group. She encouraged students to justify their responses using material from the text and explain their process for arriving at those answers.

Exhibit 1.8. Sample lesson cycle to teach a small set of academic vocabulary words in depth[55] *(continued)*

Day 4: Provide Opportunities to Use Words in Sentences and Understand Multiple Meanings

Ms. Hunter had her students (either individually or in pairs) sketch pictures that represented the meaning of each target word and write sentences related to these graphic representations. For example, for the target word *investigation*, one student sketched a detective investigating a crime and wrote the following sentence: *The detective led an investigation to find the stolen paintings.*

After the sketching activity, Ms. Hunter had her students complete an activity in which students practiced determining the appropriate definition for target words with multiple meanings based on the context. See her activity for the word *environment* below.

Choose the correct definition for each sentence: Choose which definition of "environment" matches its meaning in each of these sentences.

environment (noun) The land, water, and air in which people, plants, and animals live.

environment (noun) surroundings.

Sentences	Definitions
Once a month we take part in a park cleanup to help protect our *environment*.	
I like living in an urban *environment* because there are interesting people and buildings all around me.	

Exhibit 1.8. Sample lesson cycle to teach a small set of academic vocabulary words in depth[55] *(continued)*

Day 5: Teach Word Parts

Ms. Hunter taught students the suffix *-tion* by first showing them simple examples of *-tion* words (e.g., *invite* and *invitation*, *celebrate* and *celebration*, *imagine* and *imagination*) and then asking them what the words have in common. She explained that the suffix *-tion* can change words from an action into a thing or idea. To deepen students' understanding of the target words, Ms. Hunter explained how adding or taking away the suffix *-tion* can change how the words are used (e.g., *investigate* and *investigation*). She displayed a Word Form Chart (such as the one below) on the wall and completed it with the responses given by students when she called on them. She then asked students to record the word forms on their own Word Form Charts.

VERBS (Action)	**NOUNS** (Person, Place, Thing or Idea)	**ADJECTIVES** (Words to Describe Nouns)	**ADVERBS** (Words to Describe Verbs)
Investigate	Investigation		
Exhibit	Exhibition		
Opt	Option		

Finally, Ms. Hunter provided students with the opportunity to apply their understanding of the suffix *-tion* in another context. Students read a new, short text that was thematically related to the article on zoos read on Day 1. After reading the text, students worked in pairs or small groups, searching for the words with the suffix *-tion* and adding those words to their chart.

Day 6: Provide Opportunities to Speak and Listen to Words

Ms. Hunter had her students work in pairs for a mock interview in which one student was a reporter and the other was a zoo design expert. Students were given two questions that contained the target words.

- In your opinion, what should be included in a bird *exhibit*?
- In your opinion, what *options* should be pursued in designing an *exhibit* for seals?

After one student responded to a question as the zoo design expert, the students were required to switch roles. The other student, now in the role of an expert, responded to the remaining question.

After providing sufficient time for the mock interview, Ms. Hunter called on some students to share their partners' responses with the whole class.

Exhibit 1.8. Sample lesson cycle to teach a small set of academic vocabulary words in depth[55] *(continued)*

Day 7: Provide Opportunities to Use Words When Writing

Ms. Hunter posted a writing prompt and graphic organizer on the wall (shown below).

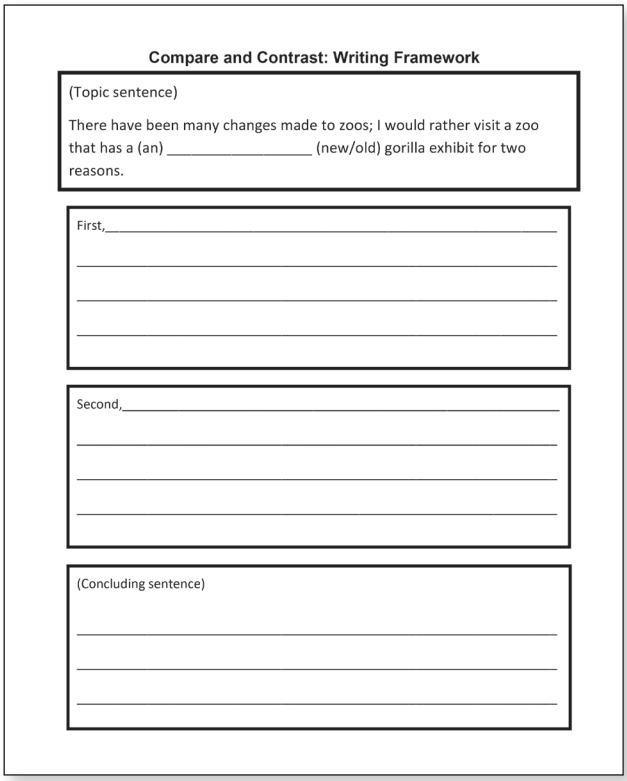
Think About It

A gorilla living in a zoo today has a very different life than a gorilla that lived in a zoo long ago. The changes made in zoos in the last 50 years have affected gorillas. They have also affected the people who go to visit the zoo. Think about what you would see and how you would feel if you walked into an old zoo to look at the gorillas. Then think about what you would see and how you would feel if you walked into a new zoo and looked at the gorilla exhibit.

Write About It

Decide what kind of zoo you think would be better to visit and write a paragraph that explains your choice. Make sure to compare the new exhibits with the old exhibits. Also, make certain that your paragraph contains at least three of the target words (*environment*, *exhibit*, *impact*, *investigation*, *pursuit*, *options*).

Ms. Hunter described the requirements of the writing assignment and reviewed the target words and types of transition and linking phrases that are likely to be useful for a compare-contrast essay. She also modeled a sample student response on the graphic organizer, thinking aloud about the idea she would focus her essay on and how she would organize her ideas in the graphic organizer. She then had her students work in pairs or small groups to generate ideas and complete the graphic organizer.



Compare and Contrast: Writing Framework

(Topic sentence)

There have been many changes made to zoos; I would rather visit a zoo that has a (an) _____ (new/old) gorilla exhibit for two reasons.

First,_____

Second,_____

(Concluding sentence)

Exhibit 1.8. Sample lesson cycle to teach a small set of academic vocabulary words in depth[55] *(continued)*

Day 8: Provide Opportunities to Use Words When Writing

Ms. Hunter had her students work on their essays using the graphic organizer as a starting point. Over the next several days, students worked on writing, revising, and editing their essays. (See Recommendation 3 for additional information on supporting students with their writing assignments.)

Ms. Hunter also developed a self-assessment checklist to help students monitor and review their use of the target words.

___ I used at least three target words.

___ I spelled the target words correctly.

___ My sentences made sense when I replaced the target words with synonyms.

Review Days: Review Target Words From Previous Units

On one of the review-unit days, Ms. Hunter had her students practice their word knowledge using an Interactive Crossword Puzzle.[56] She had her students work in pairs for this activity. Ms. Hunter gave each student a copy of the puzzle with half of the answers already filled in. One student in the pair had all of the "down answers" filled in while the other had all of the "across answers" filled in. Each student in the pair provided clues to their partner to complete the words that they did not have on their page. Ms. Hunter took note of words that students had not retained so that she could reteach those words.

56. Teachers can easily create crossword puzzles using public websites.

Roadblocks and Solutions

Roadblock 1: *Selecting a piece of engaging informational text above and beyond the district-mandated curriculum is not an option at our school/in our district. We must follow strict scope restrictions and schedules.*

Solution: The Common Core State Standards for English Language Arts require the use of complex literary nonfiction, historical, scientific, and technical texts in both elementary and middle grades. The panel's suggestion of selecting content-rich informational texts aligns with the requirements of the Common Core State Standards.[57] In that sense, the panel's suggestions will not place any undue additional demands on the teacher. Administrators can support the teachers by being proactive and making this transition to accessible content-rich texts a priority. Complex texts are available on some public websites. In addition, basal curricular reading material and trade books can serve as good sources of informational text, especially at lower grade levels (i.e., K–2). Often core reading programs are comprised of units or lessons that include reading material that is informational in nature (e.g., a unit on animals, a unit on cities).

Roadblock 2: *Teachers may not have time to engage in all of these steps to teach words deeply (i.e., choose high-quality selections, identify important words, craft student-friendly definitions, determine examples and non-examples, and plan meaningful activities).*

Solution: The panel suggests working with other teachers in their grade-level teams to accomplish these tasks. Administrators should arrange for these teams to have common planning times so that they can use their collective knowledge and expertise to choose appropriate reading selections, carefully select words to teach, write student-friendly definitions, determine examples and non-examples, and plan activities that will be meaningful and engaging.

57. National Governors Association Center for Best Practices and Council of Chief State School Officers (2010).

Recommendation 2

Integrate Oral and Written English Language Instruction into Content-Area Teaching

The adoption of the Common Core State Standards in most states,[58] along with the adoption of more rigorous academic standards in others, has increased expectations for students' oral and written academic communications. Students are expected to read, comprehend, and articulate the meaning of increasingly complex informational texts, write opinion pieces justifying their arguments and conclusions by citing evidence from these texts, and participate in discussions with their peers about issues resulting from their work.[59] New standards pose a unique set of challenges not only for English learners, who are already facing the double demands of building knowledge of a second language while learning complex grade-level content, but also for teachers who must find effective ways to make challenging content comprehensible for students.[60]

The rigors posed by the new standards provide an important window of opportunity for teachers to help English learners build English language skills while learning challenging new content. In this recommendation, the panel provides suggestions for effectively addressing English learners' content and language needs in content-area classes. Specifically, the panel recommends providing structured opportunities for engaging students in academic discussions about the content, using instructional tools strategically to clarify and anchor the content, and teaching explicitly academic vocabulary that is central for understanding the content.

Summary of evidence: Strong

Five studies that met WWC standards provide evidence for this recommendation. All five studies resulted in positive impacts on content-area acquisition measures in science or social studies.[61] Two studies essentially investigated the effectiveness of interventions that provide comprehensive

58. Common Core State Standards Initiative (2012).
59. E.g., CCSS.ELA-Literacy.R1.3.1, CCSS.ELA-Literacy.W.5.1, and CCSS.ELA-Literacy.SL.7.1 (National Governors Association Center for Best Practices & Council of Chief State School Officers, 2010).
60. Gersten (1996).
61. All five studies include multi-component instructional interventions.

instruction in content-area classes by employing all the practices articulated in this recommendation.[62] The remaining three studies furnish evidence for some of the instructional practices described in this recommendation.[63] Given the overall consistently positive impacts across all five studies and as there are no discernible or contradictory negative effects, the panel has assigned a *strong evidence* rating for this recommendation.[64]

How to Carry Out the Recommendation

1. Strategically use instructional tools—such as short videos, visuals, and graphic organizers—to anchor instruction and help students make sense of content.

Use short video clips (less than five minutes long) and visuals—such as pictures, experiments, demonstrations, and 3-D models—to anchor content instruction in a common shared experience.[65] Many of these tools can be downloaded from public websites, and grade-level teams might consider building a library of website addresses. Video clips and visuals are useful because they are engaging for students (when not overused), and they help prepare students for a lesson by providing necessary background knowledge and raising issues and/or articulating themes to be pursued in the lesson.[66]

In addition, by anchoring the learning of new content in a common shared experience, materials can help stimulate discussions among students and can be used as a lead-in for small-group and paired discussions. To more easily stimulate a rich discussion on the topic, it is important to select short video clips[67] and visuals that are engaging and interesting to the students. Encourage students to be active learners during these activities, by providing them with some thought-provoking questions before the video is shown to guide their viewing or examination of the visual material.[68]

See Exhibit 2.1 for a sample lesson segment on using a video to "anchor" instruction in a common shared experience. In this example, Mr. Dang, an eighth-grade social studies teacher, plans his lesson on Rosa Parks and the Montgomery Bus Boycott[69] using a short 5-minute video to anchor instruction.

62. **August et al. (2009); Vaughn et al. (2009).**
63. **Brown, Ryoo, and Rodriguez (2012); Ryoo (2009); Silverman and Hines (2009).**
64. Although students in Grades 3, 4, and 8 were not included in any of the five studies used to support this recommendation, the panel believes results from the five studies apply to students in Grades K–8.
65. **August et al. (2009);** Gersten, Baker, Smith-Johnson, Dimino, and Peterson (2006); **Ryoo (2009); Silverman and Hines (2009); Vaughn et al. (2009).**
66. **August et al. (2009); Ryoo (2009); Silverman and Hines (2009); Vaughn et al. (2009).**
67. Short, interesting video clips can often be found on public websites such as YouTube and museum websites. If access to such public websites is unavailable in certain schools, specific requests made to the school's or district's IT department is likely to result in access to these websites.
68. **Vaughn et al. (2009).**
69. On December 1, 1955, in Montgomery, Alabama, Rosa Parks took the bus home from her job as a seamstress in a department store. She sat in the fifth row, which was designated as the first row of the "Colored Section." As her ride home continued, the bus became full. When this occurred, the seats in the front of the bus were supposed to be given to white passengers. The bus driver ordered Rosa Parks and three other African Americans to move to the back of the bus so that white bus riders could sit in their seats. When Rosa Parks refused to give up her seat, she was arrested and fined 10 dollars. Parks' courage set off a series of events that changed the United States.

Exhibit 2.1. An example in anchoring instruction using video[70]

Mr. Dang's Lesson on Rosa Parks and the Montgomery Bus Boycott

Mr. Dang first selected three words/phrases—*boycott*, *refuse*, *Colored Section*—to pre-teach before students viewed the video. Mr. Dang then reviewed the questions the students would be responsible for answering after watching the video:

- Why was Rosa Parks arrested?
- Why did Rosa Parks refuse to give up her seat?
- Choose an adjective to describe her.
- Why do you think Rosa Parks was arrested this time and not previously when she rode the bus?

After viewing the video, Mr. Dang asked his students to discuss their responses, write down the responses based on their discussion, and rehearse their responses with their partner to prepare for the class discussion. (Students in Mr. Dang's class were assigned to pairs. Each pair was made up of students with different levels of English proficiency, as described in *How-to* # 3.) Mr. Dang then called on students at varying degrees of English language proficiency to share their specific perspectives and summarize the discussion.

While videos and visuals help anchor the content, graphic organizers can help scaffold learning by enabling the group to organize material around a common text structure, such as a temporal sequence or compare-contrast.[71] Graphic organizers and the accompanying brainstorming activities can make obvious the patterns and relationships among facts, terms, and concepts. If students are taught to practice using them and to use them consistently, these tools can help make the content comprehensible and can serve as a source for related writing and speaking activities.[72]

See Exhibit 2.2 for two commonly used graphic organizers. One is a Venn diagram that allows for a compare-contrast of two different concepts, situations, or objects. The second is a cause/effect organizer that illustrates the results (effects) of an event or chain of events (cause). Often, graphic organizers can be downloaded free of charge from the Internet, and usually the websites also explain the purpose of these organizers.

The panel suggests that, initially, teachers explicitly demonstrate how to complete a graphic organizer or, for those unfamiliar with them, even model how to "read" a graphic organizer by walking through a completed one. Demonstrate via think-alouds how to distill essential information from the text, video clips, or other visuals. Both the teacher and the students should explain why a given fact or piece of information is important, and why other pieces of information are less important. Students can practice answering—and then asking themselves—questions about whether or not a given piece of information in the passage is important or relevant.

During the early stages when students are learning how to use a graphic organizer, the panel suggests that teachers complete parts of the graphic organizer in advance and have students finish these partially filled organizers based on the material they have read or viewed. As students develop proficiency in distilling the information from the text or

70. Adapted from Gersten et al. (2006).
71. August et al. (2009); Vaughn et al. (2009).
72. August et al. (2009); Vaughn et al. (2009).

visuals and completing partially developed graphic organizers, students can complete the whole organizer by themselves. It is probably best to begin by using one particular graphic organizer (e.g., a Venn diagram, a sequence graphic organizer, or a compare-contrast graphic organizer) rather than introducing students to many types of organizers early on.

See Exhibit 2.2 for an example of a science lesson incorporating video clips and graphic organizers. In this lesson, Ms. Gomez's third-grade students are learning about the effect an environment can have on animals and their behavior.

Exhibit 2.2. A sample science lesson using video clips and graphic organizers to anchor and make sense of content

Ms. Gomez's Life Science Lesson on the Environment's Effect on Animal Behavior

Sample Life Science Standards Addressed by the Lesson

- Students know that when the environment changes, some plants and animals survive and reproduce, while others die or move to new locations.
- Students know that in any particular environment, some kinds of plants and animals survive well, some survive less well, and some cannot survive at all.

Content Objective for the Lesson

- Students will be able to identify features in an animal's environment that impact its quality of life.

Language Objectives for the Lesson

- Students will be able to orally compare and contrast zoos in the 1960s with zoos today using the following sentence frames:
  - Zoos in the 1960s were different from zoos today because _____.
  - Zoos in the 1960s were the same as zoos today because _____.
- Students will be able to orally discuss the impact that a change of environment has on a zoo animal using the following sentence frame:
  - Changing the environment of a zoo animal means that the animal _____.

Ms. Gomez's Lesson

Ms. Gomez chose words for instruction that are conceptually central to understanding the video clips and the text (i.e., *environment*, *impact*, *exhibit*). She pre-taught these words before students viewed the video and read the selection.

Exhibit 2.2. A sample science lesson using video clips and graphic organizers to anchor and make sense of content *(continued)*

Then, before starting the discussion and the reading activity, Ms. Gomez asked students to watch two video clips. The first showed animals confined to cramped cages and illustrated visually how animals were exhibited in zoos 50 years ago, and the second showed animals in their current environment at the Bronx Zoo. (YouTube and other public websites provide a rich selection of video clips.) She explained that after watching the video, they should be ready to describe what they saw and answer the following questions:

1. How much room did the animals have to move around in the zoos 50 years ago compared to today's zoos?
2. Where did the animals "live" and sleep in zoos 50 years ago and in today's zoos?
3. Compare how animals look in today's zoos with the way they looked in zoos 50 years ago (e.g., happy, bored, attentive). Why?

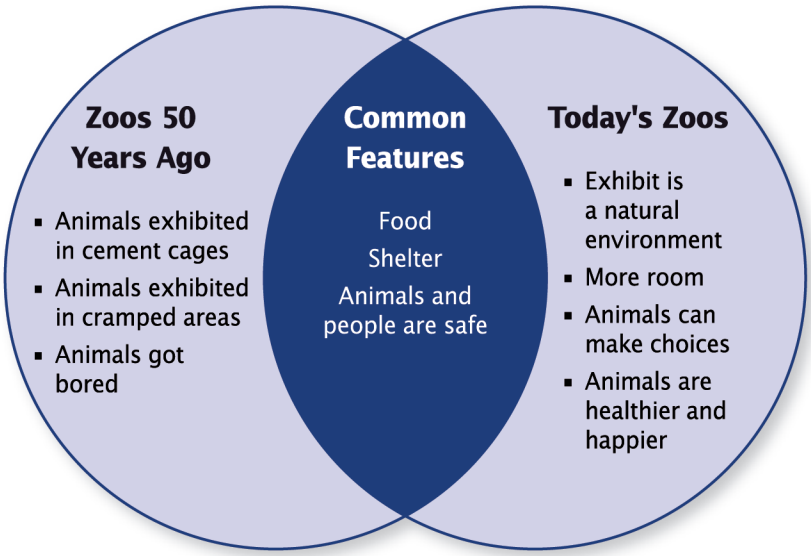
After viewing the first video clip, Ms. Gomez provided time for students to discuss what they saw with a partner. Then, she asked several students to share their responses with the whole class while she wrote their responses on chart paper under the heading, "Zoos 50 Years Ago." She used the same procedure for viewing the second video clip. Student responses were written under the heading, "Today's Zoos." Students also discussed the questions listed above, after completing the separate activities. Ms. Gomez recorded their responses on chart paper.

Next, Ms. Gomez and her students chorally read the following text (this text also appears in Recommendation 1; it is repeated here for the reader's convenience):

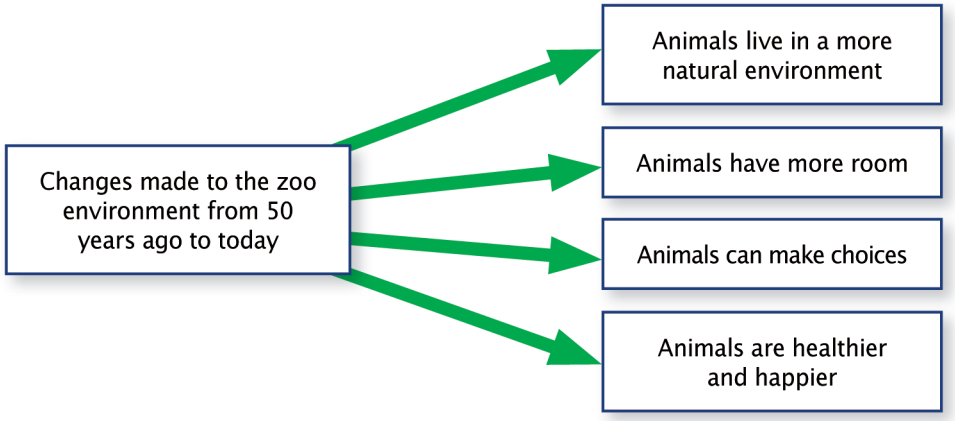
> When you walk into a zoo today, the exhibits look different than they used to look years ago. Before the 1960s, zoos had cages with tile walls and floors. Now, animals in zoos live in more natural environments. For example, instead of gorillas pacing back and forth in cramped cement areas, they play on soft grass and nap in trees. Before, large birds lived in small cages. Now, zoos have large exhibits where birds can stretch their wings and soar from tree to tree. According to zoo design expert Jon C. Coe, these changes often have a positive impact on animals' health and happiness.
>
> Still, creating better living spaces is just one step toward improving the lives of animals that live in zoos. Even in exhibits that look like their natural environments, animals can become bored. According to Coe, boredom can have harmful effects.
>
> "An exhibit may look great, but it isn't doing much for the animal unless it also involves a choice of things to do all day," said Coe. Animals need to be challenged with activities such as looking for food and exploring their surroundings. In fact, some research has shown that giving zoo animals more choices and activities promotes good health and lowers the incidence of violent behavior. Today, several zoos have created living environments for their animals that involve the kinds of pursuits that Coe described. For instance, the orangutans at the National Zoo in Washington, DC, can travel across the zoo on overhead ropes to visit friends.
>
> Coe recommends more investigation into these types of zoo exhibits and their impact on animal health. With this new pursuit of creating more natural environments in zoo exhibits, he sees a happier and healthier future for many zoo animals.

Exhibit 2.2. A sample science lesson using video clips and graphic organizers to anchor and make sense of content *(continued)*

After students viewed the videos and read the passage, Ms. Gomez led her students in completing the Venn diagram (presented below) to illustrate the similarities and differences between the ways animals lived in zoos 50 years ago and in zoos today. The class completed the Venn diagram using information students learned from reading the selection and the responses that Ms. Gomez wrote on the chart paper. Because Ms. Gomez's students were not proficient in completing the Venn diagram, she guided them in completing a partially filled diagram in a whole-class setting. This example compares zoos from 50 years ago with zoos today.



After completing the Venn diagram, Ms. Gomez worked with her students on completing a cause/effect graphic organizer (presented below). Since this was the first time her students were working with this type of graphic organizer, Ms. Gomez modeled how to complete a blank one using the information from the video clips, the text, and the Venn diagram. She thought aloud, describing how and why she chose the critical information that needed to be entered into the organizer. She completed the diagram below, walked the students through a demonstration of how to verbally summarize the diagram, and then had students practice summarizing the diagram with a partner as she just had. (Note that the cause/effect graphic organizer presented below is a completed one.)



2. Explicitly teach the content-specific academic vocabulary, as well as the general academic vocabulary that supports it, during content-area instruction.

During science, mathematics, social studies, or literature instruction, explicitly teach students the academic vocabulary necessary for understanding the content material.[73] In the panel's opinion, the purposeful, systematic, and explicit methods for teaching academic vocabulary described in Recommendation 1 are also applicable to teaching academic words during content-area instruction. To ensure that new words become part of students' listening, speaking, reading, and writing vocabularies, the panel believes it is important that both new and previously learned words be reviewed on a cumulative basis.

Teach **content-specific academic words** that are essential for understanding the content, as well as the **general academic terms** that are critical for understanding specific content words.[74] For example, in science, to teach the content-specific word *photosynthesis*, it will be necessary to teach the general words *process* and *convert*. Students who are learning about the Executive Branch of the Federal government in social studies will need to know the meaning of general terms such as *separation*, *branch*, and *power*, some of which, because of multiple meanings, can be particularly confusing for students.

Words such as *branch* and *power* have meanings that are specific to the content area in which they are used. For instance, a *branch of government* is different from the *branch of a tree*, and *electric power* is different from *power in government*. Explicitly teach the multiple meanings of such words using examples, non-examples, and visuals.[75] With the term *branch*, visual diagrams showing the branches of government and branches of a tree can help students see and process the similarities in the use of the term branch in two different ways. Similarly, the word *force* has different meanings depending on the context (i.e., strength or energy; organized body of soldiers; coercion; or power). In science, students learn about the *force* of gravity, magnetic *forces*, and centripetal *force*. In contrast, in social studies, *force* can be used to describe the military troops deployed to maintain order (peacekeeping *force*), using *force* to achieve political goals, or the importance of the *force* of an argument during a trial or debate. After explicitly teaching the multiple meanings, provide students with a variety of practice activities to help cement their understanding and application of these words in different contexts.

The technical terms that students usually encounter in content areas can often be initially introduced using everyday language.[76] However, be aware that everyday language will often make for somewhat restricted definitions. It is important to quickly move into the accurate, if more complex, technical meanings, using visuals and examples from the text whenever feasible. For example, when introducing the term *photosynthesis*, a teacher can begin explaining by providing an analogy with people. Just like people, plants need food to live. However, plants make their own food using air and sunlight, whereas humans eat vegetables, fruits, grains, and meat in order to live. After teaching the general academic terms *process* (e.g., plants *use* or *process* air and sunlight) and *convert* (e.g., *change* or *convert* air and sunlight to food), the teacher can explain that photosynthesis means the plant's *process* of *converting* sunlight and air into food. Gradually, the teacher can expand by explaining that photons from the sun and carbon dioxide in the air are the specific components plants use in the conversion process of photosynthesis.

73. August et al. (2009); Brown et al. (2010); Ryoo (2009); Silverman and Hines (2009); Vaughn et al. (2009).
74. August et al. (2009).
75. Beck et al. (2002).
76. Brown et al. (2010); Ryoo (2009).

Given the large number of words that can potentially be taught in content-area classes, the panel believes one of the first tasks is to determine which words should be taught to students explicitly and in depth. Often, the bolded words in curricular material are publisher-selected words whose definitions are in the glossary or in the text itself. However, it is likely that the publisher may not have highlighted many other vocabulary words that are conceptually central to comprehending the text and are important for students to know in the future. If a teacher or grade-level team member feels that certain words are essential, those words should be targeted for in-depth intensive vocabulary instruction, whether or not the publisher has selected them. Often, the final set of words selected for in-depth instruction will be a mix of the publisher's suggestions and the teacher's or grade-level team's suggestions.

For example, in the Aztec lesson in Exhibit 2.3, several key words are bolded (e.g., *conqueror*, *empire*, *warrior*, *generation*, *tribe*). However, other words, such as *menacing*, *approach*, *prophecy*, *triumphed*, and *bitter*, may also need to be taught explicitly. Exhibit 2.4 explains how a seventh-grade teacher, Mrs. Prinz, selects words to teach explicitly in her class.

Exhibit 2.3. Text for a history lesson on Aztec civilization[77]

The Story of a Mighty People

Imagine that you are an Aztec. The year is 1519 C.E. Terrible things have been happening, like a tongue of fire (a comet) flying over the night sky. Now, menacing[78]-looking white-skinned men riding large beasts approach the capital. You've never seen horses before. You think the prophecy must be coming true.

The Spanish **conqueror** Hernán Cortés arrived in Mexico, where the Aztecs lived in 1519. The marvelous Aztec city of Tenochtitlán was built on a marshy island in Lake Texcoco. When the Spanish attacked, the Aztecs could have easily defended their city. They could have removed the causeway to the mainland, but they did not.

The Spanish looked so strange that the Aztecs thought they must be gods. So they let them enter their city. They soon realized that the Spanish were only men. They rebelled and the Spanish had to retreat. However, the Spanish triumphed in 1521, putting an end to a powerful **empire** that had lasted hundreds of years.

The Aztecs had started out as a wandering people. They admired the Olmecs and Toltecs, other people who had lived in Mexico before them. The Aztecs settled in the Mexican valley, where Mexico City is today. They built a capital that housed between 80,000 and 300,000 people. It was one of the world's largest cities.

77. Sample text has been taken with permission from the Center for Applied Special Technology (www.cast.org) and was used in an intervention developed by the researchers at the Center (Dalton, Proctor, Uccelli, Mo, & Snow, 2011; Proctor, Dalton, & Grisham, 2007; Proctor et al., 2011).
78. The four **bolded** words in the text are terms the publisher has indicated are content-specific academic vocabulary, whereas the five underlined words indicate general academic vocabulary, which will be useful in multiple content areas.

Exhibit 2.3. Text for a history lesson on Aztec civilization[77] *(continued)*

The Aztecs were powerful **warriors**. For **generations**, they engaged in bitter fighting and conquered other tribes. They built their empire by defeating most of their neighbors. The conquered people paid a tribute to the Aztecs. Tribute is similar to the taxes we pay the U.S. government. Aztec rulers became wealthy from the goods they received as tribute. The Aztecs kept detailed records of what each conquered **tribe** owed. One record showed chili peppers, white feathers, shields, and cloaks.

Exhibit 2.4. Mrs. Prinz's selection of appropriate words to teach in her class

In preparing for the lesson on Aztecs, Mrs. Prinz, a seventh-grade teacher, is selecting vocabulary words that she wishes to teach explicitly before her students read *The Story of a Mighty People*. She knows that the five bold words in the text are publisher-selected, content-specific academic vocabulary, while the five underlined words are general academic vocabulary that will likely appear in other content areas. Of these ten words, the teacher quickly determines that the words *tribe*, *warriors*, *generations*, and *bitter* do not need to be taught explicitly because they have been taught previously. Although the teacher observes that *menacing*, *approach*, and *triumph* could be understood from the context clues in the sentences, she decides to underscore each word's meaning through brief descriptions, body language, and gestures during a quick pre-teaching lesson. These actions will be repeated during the reading of the text. These decisions have left three words for in-depth, explicit instruction: *prophecy*, *empire*, and *conqueror*. Mrs. Prinz determined that these words should be explicitly taught *because they are conceptually central to comprehending the text and are important for students to know in the future*.

Even though teachers may teach the critical vocabulary necessary for understanding the content, it is very likely that students will come across other words in the text and in other materials that they do not fully understand. When this happens, students often turn to dictionaries and glossaries (increasingly on the Internet) that may be well beyond their reading level, and that are often jargon-ridden.[79] The panel believes it is important to provide students—especially those who are at the beginning proficiency level of English language development—with other sources, such as a functional dictionary, that they can refer to for student-friendly definitions of words they do not understand. Show students that such sources are also available on some public websites. The effective use of dictionaries is a skill that needs to be taught explicitly. Have students work with various types of dictionaries and glossaries, as they will be able to use them as an accommodation during standardized testing in many districts.[80]

79. Marzano and Pickering (2005); Scott and Nagy (1997).

80. Use of dictionaries or specialized glossaries as an accommodation during tests has been found to improve the test performance of English learners (Kieffer, Rivera, & Francis, 2012).

3. Provide daily opportunities for students to talk about content in pairs or small groups.

As students are working on learning new content, facilitate discussion opportunities for students to talk and learn from each other by having them work in pairs or in small groups.[81] Such opportunities not only will provide students with multiple occasions to practice the language they are still learning but also will help the teacher ascertain that they are understanding and processing the new content. Another likely benefit of discussing academic content in pairs and in small groups is that students get a chance to rehearse and practice their responses, and thus will be more prepared and confident when they share them in front of the whole class. The panel suggests pairing or grouping students based on heterogeneous levels of language proficiency.[82] In heterogeneous groupings, students with stronger English skills can provide a language model for less proficient students.

In the opinion of the panel, opportunities for students to discuss content with their peers do not have to be long but should occur multiple times daily.[83] For example, students could be asked to briefly explain their reasons for how they solved a math problem or use a few content-specific vocabulary words to explain a process they are learning about in science. They could also be asked to share evidence from the text supporting their opinion of a historical event. In addition, allow students, especially those at the emergent English proficiency level, to discuss English language texts in their primary languages, as this flexibility might promote comprehension by giving students a chance to articulate and clarify ideas before trying to express them in English.[84]

Additional activities, such as having students read and discuss short text passages, role-play a word or concept's meaning, or complete a Think-Pair-Share activity, are also very useful for both processing content and practicing language.[85] For example, in the Aztec lesson in Exhibit 2.3, teachers can ask each member of a student pair to take turns reading each paragraph to their partner, stop to summarize each paragraph after reading it, and then make a prediction about what might occur in the next part of the text. Students can then see whether the prediction is verified as they read the next paragraph or two. After reading the entire selection and summarizing sections of the text as it was being read, students can be asked to summarize the whole text orally.[86] Members of pairs can also be asked to write down any questions that come to mind as they discuss the passage with their partners. These summaries and student-generated questions can be shared with the entire class during group discussion.

Alternatively, teachers can present students with two or three thought-provoking questions along with low-inference, factual questions. The factual and inferential questions will highlight important information that students can discuss with a partner (Think-Pair-Share) or in small groups, before sharing their responses with the whole class. For example, for the lesson on Aztecs the following factual and inferential questions could be used to guide the discussion:

- *Why did the Aztecs destroy their capital city rather than destroy the causeway?* (Factual)
- *Why do you think the Aztecs thought the Spanish looked like gods?* (Factual)
- *How do you think this historical event affects Mexico today?* (Inferential)

81. August et al. (2009); Echevarria, Richards-Tutor, Chinn, and Ratleff (2011); **Ryoo (2009);** Saunders and Goldenberg (1999); **Vaughn et al. (2009).**
82. August et al. (2009); Ryoo (2009); Vaughn et al. (2009).
83. Echevarria, Vogt, and Short (2012).
84. Ballenger (1997); Hampton and Rodriguez (2001); Kearsey and Turner (1999).
85. Lesaux et al. (2010).
86. Fuchs, Fuchs, Mathes, and Simmons (1997).

- *What do you think the Aztec prophecy was?* (Inferential)
- *Why do you think the Aztecs realized the Spanish were not gods?* (Inferential)

Whenever appropriate, have students cite evidence from the text to support their response or the position they take.[87]

For these discussion activities to be productive and successful, teachers must structure and actively monitor the student groups, and provide guidance to facilitate a focused and targeted discussion. Thus, the teacher is in the role of a facilitator. If teachers are not actively involved, student discussions of a text may disintegrate into social conversations. It may be necessary to scaffold many of these content/language-learning activities so that students who are less advanced or younger have prompts that help them begin their responses. For instance, to facilitate a discussion on the Aztec text presented in Exhibit 2.3, the teacher may use sentence frames such as, "A reason the Aztec empire was defeated by the conqueror, Hernán Cortez, and his army was _____," and "If the Aztecs had not been influenced by a prophecy, they might have _____." However, students who have stronger language skills will need fewer supports for their discussion, especially in upper elementary grades and middle school.

The panel also recommends that, at times, teachers scaffold instruction so that students at lower levels of English language proficiency are asked questions tailored to their own current language levels. This does **not** mean that students at lower levels of English proficiency are given questions that are less cognitively demanding (e.g., asked only very basic, literal questions while other students are given a mix of challenging, inferential, and literal questions). Rather, the language used in the questions can be simplified; additionally or alternatively, students can be provided with a dictionary or a computerized dictionary program to help them translate challenging words. Teachers also may consider rephrasing a complex inferential question into one that is simplified for clarity. For example, consider the question, "How do you think this historical event affects Mexico today?" This question could be rephrased as, "How do you think Mexico changed because of the Aztec period? What examples of changes do you still see today?"

4. Provide writing opportunities to extend student learning and understanding of the content material.

Plan writing activities that will allow students to apply their newly learned concepts and skills.[88] These activities could be in the form of writing a lab report on an experiment in photosynthesis, providing a written response to a prompt on zoos, showing one's understanding of a concept such as cellular respiration, or using a graphic organizer to summarize a passage on Aztecs. For further information on writing, see Recommendation 3.

87. National Governors Association Center for Best Practices and Council of Chief State School Officers (2010).
88. August et al. (2009); Brown et al. (2010); Ryoo (2009); Vaughn et al. (2009).

Putting It All Together

The four *How-to* steps described in this recommendation are incorporated into a science lesson that introduces the three forms of matter in Exhibit 2.5.

Exhibit 2.5. Sample science lesson on the properties of solids

Mr. Turner's Third-Grade Science Lesson on the Properties of Solids

Sample Third-Grade Physical Science State Standards Addressed by the Lesson

- Students know that matter has three forms: solid, liquid, and gas.
- Students know that evaporation and melting are changes that occur when objects are heated.

Content Objectives for the Lesson

- Students will become familiar with the properties of a solid.
- Students will be able to identify items that are solids.

Mr. Turner's Lesson

Mr. Turner developed a language objective that complemented the science objective. In his lesson plan he noted the following:

Language Objectives for the Lesson

- Students will orally describe the properties of a solid using the following sentence frame. This activity will occur during either pair sharing or group discussions with classmates, and in writing assignments.
  - ◇ *The _____ is a solid because it _____ and _____.*

Before approaching these objectives, however, Mr. Turner chose the technical words that were conceptually central to understanding the selection (*matter*, *properties*, *visible*, *mass*, *volume*, *atom*, *molecule*). These words had all been taught previously, but it seemed essential to ensure that students knew their meaning before delving into this abstract but critical, scientific topic.

He showed students the "Inquiry Box" (a concept that his students were already familiar with) and told them that today's inquiry would focus on the properties of solids, one of the three forms of matter. Inside the Inquiry Box were examples of solids such as a pencil, a book, an eraser, a cup, and a spoon, as well as non-examples of solids such as water (contained in a bottle), juice (contained in a juice box), and air (contained in a balloon). Then the class read the following passage chorally:

Exhibit 2.5. Sample science lesson on the properties of solids *(continued)*

Matter: Solids, Liquids, and Gases

Everything we can see, taste, touch, feel, or smell in the world around us is made up of matter. Matter is in one of three states: solid, liquid, or gas. All matter is formed of atoms, which are too small to see. Atoms join together to form molecules. Water, for example, is also made of molecules. Each water molecule contains two atoms of hydrogen and one of oxygen. Scientists refer to the water molecule by the scientific notation H_2O.

Whether something is a solid, a liquid, or a gas is based on its properties. Its properties include (1) its shape, (2) its mass (how much matter or weight something has), and (3) its volume (how much space it takes up). Solids are simple to identify. They have an obvious shape, mass, and volume. This is because the atoms in solids are spaced very closely together, which gives the matter a "solid" or hard shape that does not change. Examples of solids are everywhere you look. In looking around the classroom, you see desks, chairs, books, papers, pencils, erasers, backpacks, windows, the door, and the clock that are all examples of solids. Other examples of solids that are outside the classroom include rocks, trees, cars, bikes, cups, forks, beds, toys, and televisions.

Some matter can change from one state to another if heat is applied or removed. For example, when ice (a solid) is heated, it melts and becomes water (a liquid). If it continues to be heated, it becomes steam (a gas). If water is put into the freezer, it will change to a solid and become ice.

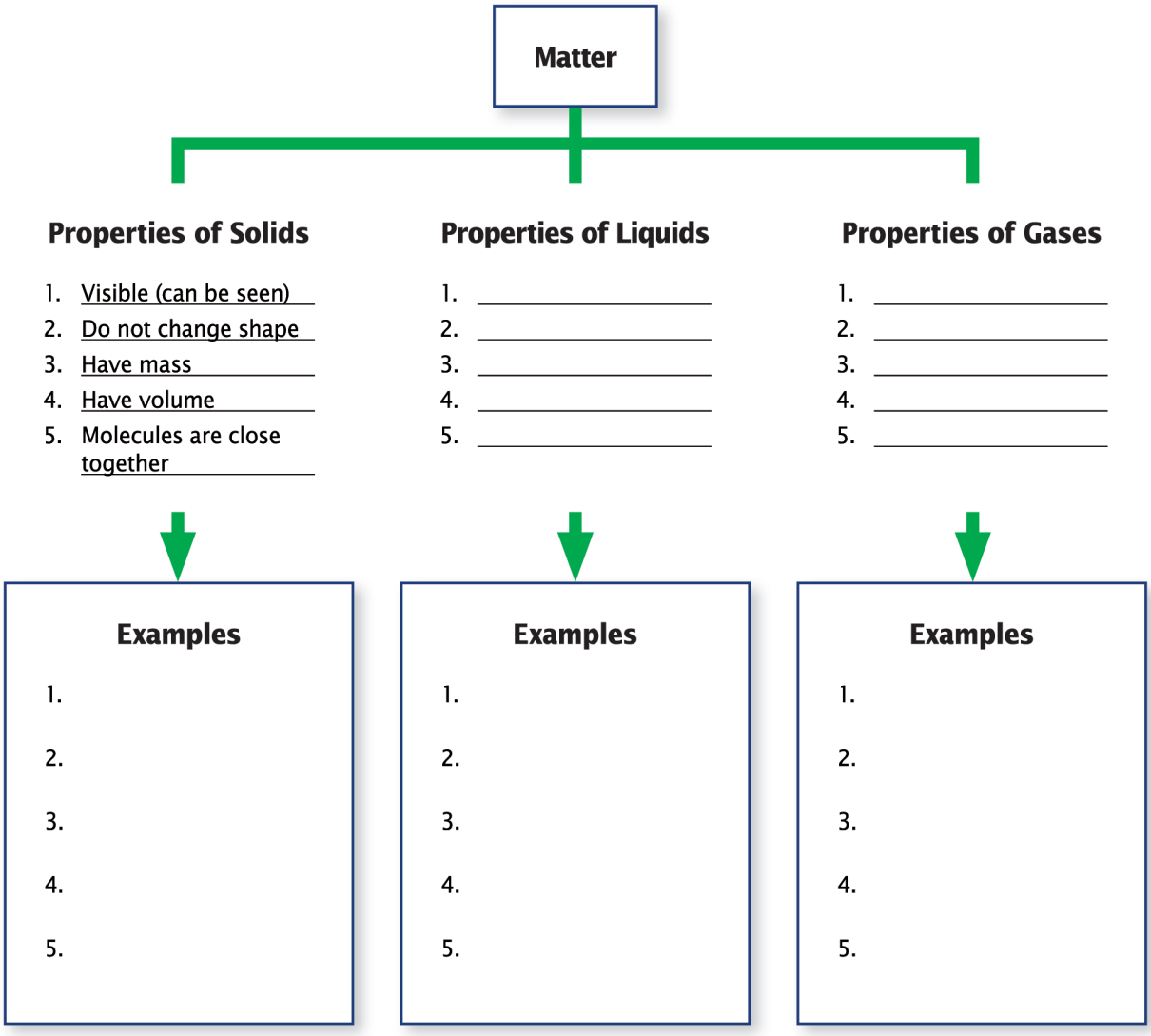
Mr. Turner explained to students that the objects or pictures in the Inquiry Box represented one of the three types of matter. He explained that the students were going to figure out which items in the Inquiry Box were examples of solids and write those items' names on the Tree Map. He called students' attention to the Tree Map's list of the properties of solids, which they were going to use to determine which items were solids.

He called on a student to choose an item from the Inquiry Box and show it to the class. To help students determine whether the item was an example of a solid, he guided them to address each property of solids by asking questions (e.g., *Is this item visible? Can this item change shape?*). After all properties were addressed, he asked, "Is this a solid? Why or why not?" He reinforced the point that solids had these properties because they were made up of tiny parts called atoms, which combined to form molecules that were very, very close together or dense. To illustrate, he asked students to stand very close together to show how the molecules in solids were dense. Mr. Turner continued the lesson by having students work with a partner. He gave each pair two objects/pictures: One was a solid and the other either a liquid or a gas. He asked students to use the properties on the Tree Map to figure out which object was the solid and tell why they made the choice by using the following sentence frame: *The* _____ *is a solid because it* _____ *and* _____.

Mr. Turner circulated around the classroom to listen to students' responses and provided specific, corrective feedback regarding content and grammatical errors. He had students copy the Tree Map and their response to the sentence frame into their science journal. Again, he circulated to provide specific feedback to students.

Exhibit 2.5. Sample science lesson on the properties of solids *(continued)*

In closing, he asked students to write two properties of a solid on their whiteboards and show their responses. He asked a few students to share their responses with the class.



Roadblocks and Solutions

Roadblock 1: *Teachers feel pressure to "cover" the content in their mathematics, social studies, or science curriculum, and thus may resist taking time away from content learning to build oral and written language skills.*

Solution: Although teaching language and content together may sometimes take more time, this investment is worth the effort. Language and content activities use many of the analytic skills for reading and understanding informational text that are stressed in the Common Core State Standards for English Language Arts. Working with graphic organizers or videos to develop succinct, evidence-based comparisons (e.g., of two historical figures or of two biological processes) or to outline potential causes of World War I provides an effective means for students to understand the underlying main ideas and themes in texts about history, science, literature, and geography. The goal of these instructional activities is to provide students with strategies and techniques for reviewing and making sense of the material covered. If these types of instructional activities comprise part of, say, three lessons per week, it is likely that students will actually maintain and process more of the content in the mathematics, science, or social studies curriculum. Teachers may also want to think of these activities not as replacing content instruction but rather as substitutes for activities such as independent seatwork and/or round robin reading or silent reading.

It is important to note that the instructional focus is on teaching key concepts for understanding the lesson's content, and not on every piece of information contained in the lessons. Minor topics can and should be taught so as to fully cover the content, but extensive time teaching them is not needed as they are not fundamental to understanding the subject, and there is not sufficient time to teach all of the content in detail.

Roadblock 2: *Teachers who specialize in the content areas of science, social studies, or mathematics may lack the expertise in language and literacy needed to integrate them with content learning, especially at the middle school level.*

Solution: The panel recognizes that doing this kind of work requires teachers, who are used to teaching primarily content, to develop new skills in language and literacy instruction. In addition to offering professional development opportunities that are targeted to meet the specific needs of content-area teachers, schools and districts can form cross-disciplinary collaborative groups of teachers that can support the sharing of knowledge and best practices around content-area language and literacy instruction. In particular, ELA and ESL/ELD teachers with more experience teaching language and literacy can share their expertise with content-area teachers, who, in turn, can share their expertise with their colleagues through grade-level team meetings and school-wide efforts. Districts and schools can support this work by providing common planning time for teachers across different content areas to collaborate, with a specific focus on teaching English learners in the ways described here. This common planning time can also be used to jointly plan instruction in language and literacy across content areas. For instance, if a science teacher is planning to teach words such as impact and exhibit in her science class, instruction in these words can be extended to other classes such as history, thus allowing the newly learned words to be reinforced and built upon across content area classes.

Roadblock 3: *Teachers may think that the additional focus on language will not be useful for native English speakers.*

Solution: Research suggests that effective teaching for English learners also benefits native English speakers.[89] This may be due, in part, to the fact that native English speakers from low-income backgrounds tend to demonstrate weaknesses in language, including knowledge of academic vocabulary, similar to those of English learners.[90] Given the similarities in demonstrated weaknesses among native English speakers and English learners, both groups of students are likely to benefit from the additional focus on language development.

89. **August et al. (2009); Carlo et al. (2004); Lesaux et al. (2010); Lesaux et al. (in press); Ryoo (2009); Vaughn et al. (2009).**
90. **Lesaux et al. (2010);** National Center for Education Statistics (2012).

Provide Regular, Structured Opportunities to Develop Written Language Skills

A key expectation of the Common Core State Standards is that all students, starting as early as first grade, will engage in analytical writing activities, during which they will learn to support their opinions, arguments, and claims with evidence from texts.[91] In response to these Standards, all students, including English learners, will be assigned challenging writing assignments, ranging from short writing prompts extending over a day or two, to long-term writing projects extending over many days, for a variety of tasks, purposes, and audiences. Note that the Standards ask that teachers move away from primarily assigning writing projects that rely largely on students' personal reflections and responses. Personal writing, at best, captures only what a student already knows and is thus less likely to prepare students for writing that requires analysis or interpretation[92]—the type of writing that leads to academic success in high school and college.

As they move up through the grades, English learners increasingly need to respond to informational texts through writing and, in doing so, generate well-organized essays that are progressively longer and more complex. The purpose of this recommendation is to provide concrete guidance on how to accomplish this goal for English learners. (For additional suggestions, readers might wish to consult the practice guide Teaching Elementary School Students to Be Effective Writers, http://ies.ed.gov/ncee/wwc/PracticeGuide.aspx?sid=17).

Summary of evidence: Minimal

Two studies met WWC standards and contribute to the evidence for this recommendation.[93] One study examined the impact of a professional development intervention in text-based analytical writing on English learners' written language ability and found positive, statistically significant effects.[94]

91. National Governors Association Center for Best Practices and Council of Chief State School Officers (2010).
92. National Commission on Writing (2003).
93. Both studies include multi-component instructional interventions.
94. Kim et al. (2011).

The second study also examined impacts in the writing domain; however, in this study, instruction in writing was only one aspect of a complex intervention focused on academic vocabulary.[95] For this study, the impacts in the writing domain were non-discernible. The panel assigned a *minimal evidence* rating to this recommendation because of this inconsistent pattern of findings. The recommendation is based largely on the panel's expertise.

How to Carry Out the Recommendation

1. Provide writing assignments that are anchored in content and focused on developing academic language as well as writing skills.

Have students work on writing assignments that are linked to content and issues covered in their classwork.[96] This often can be achieved by connecting the assignment to the unit or theme from the text being read and discussed in history, science, or literature. The writing assignments can also be linked to trade books, brief selections from websites, or other sources. To promote development of language skills, ensure that the writing assignments have specific objectives related to developing specific English language skills and/or learning target academic vocabulary.

In Recommendation 1, the panel described how to use a text passage on the quality of animal habitats in zoos to anchor academic vocabulary instruction. This same type of passage can serve as an excellent platform for instruction that supports English learners' written language skills. Exhibit 3.1 describes an example of a text-based writing prompt connected to the text on zoos.

The panel suggests consistent use of a set of instructional routines that support students as they generate and organize their ideas in preparation for the writing task such as the prompt in Exhibit 3.1. Routines should also guide students through the process of moving from notes or graphic organizers, to complete sentences, then to a paragraph, and finally to a written composition that reflects revisions from several drafts.[97]

In addition to instructional routines, students are likely to need explicit instructional support to be successful at their writing tasks. For example, prior to beginning the writing project described in Exhibit 3.1, review target academic vocabulary that students should use in their essays,[98] as well as the types of transition and linking phrases useful in compare-contrast essays (e.g., *for instance*, *consequently*, *therefore*, *because*, *also*), and phrases that are likely to be useful for this type of writing assignment (e.g., *in order to*, *in addition to*, *because of*).[99] Additional guidance is presented in the next *How-to* on providing instructional supports that can be used to help students develop a quality written product.

95. Lesaux et al. (in press).
96. Kim et al. (2011); Lesaux et al. (in press).
97. Kim et al. (2011); Lesaux et al. (in press).
98. Lesaux et al. (in press).
99. Kim et al. (2011).

Exhibit 3.1. Text-based writing instruction (spanning 3–4 lessons)[100]

Think About It

A gorilla living in a zoo today has a very different life than a gorilla that lived in a zoo long ago. The changes made in zoos in the last 50 years have affected gorillas. They have also affected the people who go to visit the zoo. Think about what you would see and how you would feel if you walked into an old zoo to look at the gorillas. Then think about what you would see and how you would feel if you walked into a new zoo and looked at the gorilla exhibit.

Write About It

Decide what kind of zoo you think would be better to visit and write a paragraph that explains your choice. Make sure to compare the new exhibits with the old exhibits. Also, make certain that your paragraph contains at least three of the target words (*environment*, *exhibit*, *impact*, *investigation*, *pursuit*, *options*).

2. For all writing assignments, provide language-based supports to facilitate students' entry into, and continued development of, writing.

Provide language-based supports so that students are able to work on their writing assignments using the conventions of academic language, which are often elusive for all students, even for native English speakers.[101] Without such sustained supports, students' written language is likely to default to non-academic topics, everyday vocabulary, and grammatical conventions that do not reflect academic writing.[102]

Language-based supports such as graphic organizers provide students with the support they need to start their writing assignments.[103] For instance, the compare-contrast graphic organizer used in Recommendation 2 to organize the key features that characterized older and newer zoo designs (see Exhibit 2.2, page 34) could be used as a starting point for the writing assignment described in Exhibit 3.1. Use of this compare-contrast graphic organizer can help students organize their thinking about the similarities and differences between old and new zoos, and can help teachers facilitate small-group discussions. Students can then move from organizing their ideas and arguments to drafting a response with the help of the support provided in the template described in Exhibit 3.2. Note how the writing template provides paragraph starters and clearly indicates the need for a concluding sentence.

100. Based on the intervention material used in **Lesaux et al. 2010.**
101. Kim et al. (2011); Lesaux et al. (in press).
102. Brisk (2012); Maguire and Graves (2001).
103. Kim et al. (2011); Lesaux et al. (in press).

Exhibit 3.2. Writing framework[104]

Compare and Contrast: Writing Framework

(Topic sentence)

There have been many changes made to zoos; I would rather visit a zoo that has a (an) _____ (new/old) gorilla exhibit for two reasons.

First,_____

_____

_____

_____

Second,_____

_____

_____

_____

(Concluding sentence)

_____

_____

_____

Other tools, such as sentence starters, also help students summarize and analyze material for the writing activity.[105] See Exhibit 3.3 for sample sentence starters. Note how they can be used for a wide variety of texts. It is best to use these sentence starters with informational text in the content areas, especially at the intermediate grade and middle school level. Brainstorm with students possible uses of a given sentence starter such as, "I think this represents_____," and work with them as they use the sentence starters to make inferences about the text.

104. Based on the intervention material used in **Lesaux et al. (2010).**
105. Kim et al. (2011).

Exhibit 3.3 Sentence starters for text-based analytical writing[106]

Tapping Prior Knowledge

This relates to...
This reminds me of...

Making Predictions

I think...
If _____, then...

Summarizing

The basic gist is...
The key information is...

Adopting an Alignment

The character I most identify with is...
I really got into the story when...
I can relate to this author because...

Forming Interpretations

What this means to me is...
I think this represents...
The idea I am getting is...

Revising Meaning

At first I thought _____, but now I think ...
My latest thought about this is...

Analyzing the Author's Craft

I like how the author uses _____ to show...
A golden line for me is...
This word/phrase stands out for me because...

Reflecting and Relating

So the big idea is...
A conclusion I am drawing is...
This relates to my life because...

Evaluating

I like/don't like _____ because...
The most important message is _____ because...

Providing language-based supports is just one aspect of instruction. For students to engage in academic writing, they have to construct a written piece of text with a clear message that can be read and understood by the audience. Students will need to be given explicit guidance in moving from the information presented in the graphic organizer to writing sentences, and from there to constructing paragraphs.

3. Use small groups or pairs to provide opportunities for students to work and talk together on varied aspects of writing.

To foster written language skills, the panel recommends arranging students in pairs or in groups of three to five, and providing them with tasks to complete together.[107] This approach allows students opportunities to engage in critical, collaborative dialogue with their peers. When students get an opportunity to listen and speak through critical conversations about text and content in collaborative settings, their writing skills and language development are likely to benefit.[108]

Student collaboration and dialogue can focus on many aspects of written language development—from working on spelling and sentence structure, to quick-writes targeting vocabulary acquisition, to long-term research projects—depending on the instructional emphasis. For instance, prior to drafting an extended written piece, engage students in a small-group discussion so that they can

106. Adapted from **Kim et al. (2011).**
107. Kim et al. (2011); Lesaux et al. (in press).
108. McNamara, Crossley, and McCarthy (2010); Olinghouse and Leaird (2009); Reznitskaya et al. (2001).

work together to brainstorm and organize ideas.[109] Students might also prepare for the writing activity by working collaboratively to develop or complete a graphic organizer,[110] or respond to short-answer questions identifying key ideas and supporting evidence from a text. When revising, group students together again and have them read each other's work, giving them the opportunity to report on each other's ideas and provide feedback when appropriate. While providing feedback, students can also describe what they understand from reading a peer's writing.[111] Guide students in how to provide feedback to their peers, initially, by providing sentence starters such as, "I like your opening sentence/paragraph because _____," "In this paragraph you have clearly explained that _____," and "An idea I have to make it stronger is _____."

4. Assess students' writing periodically to identify instructional needs and provide positive, constructive feedback in response.

Assess students' writing on an ongoing basis to determine areas that should be the focus of classroom writing instruction.[112] Formative assessments can provide insight into the challenges that are common to many children,[113] such as appropriate punctuation, spelling, capitalization, or sentence construction. In the panel's view, regular use of formative assessments may be an excellent way to understand how to best support organization and richness of writing.

Students' writing samples are excellent data sources for formative assessment. For example, looking closely at English learners' writing samples may shed some light on how their primary language influences their English development. Features of students' primary languages often make themselves visible through unusual syntax and spelling of written English. A Spanish-literate student who is just learning to write in English might spell the word *people* as *pipol*, as this latter spelling far better reflects the Spanish sound-symbol relationship. A Mandarin-speaking student might consistently neglect to use articles in her writing (e.g., *I have pencil* instead of *I have a pencil*), as Mandarin speech does not use articles but instead uses numbers and classifiers (e.g., *I have one chocolate* versus *I have a piece of chocolate*). Over time, writing can become an increasingly clear window into students' English language development. Use this information to provide students with targeted instruction and constructive feedback leading to a clear, achievable goal.

As with effective early reading instruction, corrective feedback that is specific, constructive, and followed by further opportunities for practice is likely to foster students' writing development.[114] The panel suggests providing students with feedback based on the lesson's or the week's instructional objective in written and oral language. For example, if the instructional target is subject-predicate agreement, give students feedback only on that aspect, not on capitalization, spelling, or organization. Similarly, if the lesson's instructional objective is to have students write a compelling argument about zoo habitats, then provide specific feedback on the ideas presented in the text rather than on spelling, grammar, or punctuation.

109. Lesaux et al. (2010); Lesaux et al. (in press).
110. Vaughn et al. (2009).
111. Prater and Bermudez (1993).
112. Kim et al. (2011).
113. Black and Wiliam (1998).
114. Gomez, Parker, Lara-Alecio, and Gomez (1996).

The panel recommends assessing students periodically using a formal writing rubric, preferably aligned to Common Core State Standards or other state or district standards. The information gained from this in-depth analysis of student writing can help teachers determine their instructional focus, by assessing a broad range of skills, including transcription (e.g., spelling, handwriting); knowledge of text structure, genre, and reader expectations; knowledge of the topic; and accurate, flexible use of words and phrases. If a rubric will be used to grade the written assignment, then students should have access to that rubric prior to beginning the assignment.

See Exhibit 3.4, where a student essay was graded based on a rubric. Such an in-depth analysis is useful in identifying students' strengths and weaknesses and in providing them with feedback.

Exhibit 3.4. An example of grading student work based on a rubric[115]

Essay on Japanese Bonsai Art

In the article of Japense art Bonsai is aproof that the trees are grown in the pots of Egypt 4,000 years ago. the trees grown and know the trees are easy to move, and therefor, partical. IT was until 200 A.D Know the chinese people they where the first one who plant the trees in the pots and for the sake of their. Know from the Japan's Kamakura period (1185) – 1333) they describe the presence. and the trees where made because from Some other Small trees. the trees grow out door and they need sunlight

Writing Rubric			
	1	2	3
Content	Content was not discussed adequately.	Content was partially discussed.	Content was discussed fully.
Content Score: *2*	*Bryan addressed most of the content in his writing sample (description of Bonsai trees, history of Bonsai, care of Bonsai, Bonsai practices today), but each point was only mentioned with one sentence, so content was not fully discussed.*		
Vocabulary	Severely limited vocabulary and key words were not used.	Some key vocabulary words were used.	Key vocabulary words were correctly used.
Vocabulary Score: *2*	*Although some of the key vocabulary words were used (Bonsai, sake, presence), words were misused in some cases (e.g., "The trees grown and know...," and "In the article of Japanse art of Bonsai is aproof"), which interfered with meaning.*		
Grammar	Contains numerous errors that interfere with meaning.	Contains some errors that occasionally interfere with meaning.	Minimal grammatical errors.
Grammar Score: *1*	*As mentioned above, the meaning of some sentences was unclear. Bryan misused the word "know" several times. In addition, he most likely meant to write "wasn't" rather than "was" and "were" instead of "where" in the following sentence, "It was until 200 A.D. know the chinese people they where the first one who plant the trees in pots for the sake of their." Since the reader had to guess at what he meant to say, the end result was that the meaning of the sentence was unclear.*		

115. Student showcased in this example is at Writing Level 2 – Early Intermediate on an English Language Development Test.

Exhibit 3.4. An example of grading student work based on a rubric[115] *(continued)*

Writing Conventions and Spelling	Meaning is unclear due to numerous errors.	Errors may interfere with meaning.	Mechanical errors do not interfere with meaning.
Writing Conventions and Spelling Score:	*Punctuation rules (i.e., capitalization and periods) were not followed. Half of the sentences did not begin with a capital letter, nor were proper nouns capitalized. Although these errors did not interfere with meaning, they were so numerous that they were distracting to the reader.*		
Instructional Recommendations:	*Bryan would benefit from creating a graphic organizer to list key ideas so that he can more fully develop and display his understanding of the content. It is unclear from this writing sample if he made careless errors or if he truly did not understand the meaning of words like "know." If he does not understand the meaning of these words, perhaps instructional time could be spent mastering these concepts during his English language development class. If Bryan simply is making careless spelling errors, he would benefit from a personal spelling book so that he can verify words he has trouble with before writing his final draft. He may also benefit from reading his writing sample aloud so that he can catch errors such as writing "was" for "wasn't." In addition, he needs to proofread his writing for punctuation errors, such as failing to capitalize the first word of the sentence or proper nouns, and omitting periods at the end of his sentences.*		

Putting It All Together

Exhibit 3.5 incorporates the four *How-to* steps described in this recommendation into a lesson for a text-based writing activity.

Exhibit 3.5. Instruction in text-based writing activity

Ms. Carson's Fourth-Grade Writing Lesson

In Ms. Carson's fourth-grade classroom, students come from multilingual backgrounds with primary languages that include Spanish, Vietnamese, and Haitian Creole. These students possess intermediate to advanced fluency in oral English, but many struggle with reading and writing, particularly within and across content areas.

For English language arts, her class just finished reading *Sadako and the Thousand Paper Cranes*, by Eleanor Coerr. The students have been fascinated and moved by the devastating effects of the U.S. bombing of Hiroshima and Nagasaki, specifically as they play out in Sadako's terminal illness. For social studies, the students are also studying World War II and how the attack on Pearl Harbor was one of the primary motivators for U.S. entry into World War II.

Ms. Carson's instruction in these two classes was guided by the following content and language objectives:

Exhibit 3.5. Instruction in text-based writing activity *(continued)*

Content Objectives

- Students will identify the antecedents and outcomes of U.S. involvement in World War II.
- Students will show an understanding of the climax of *Sadako and the Thousand Paper Cranes* by taking the perspective of one or more of its characters (e.g., Sadako's parents).

Language Objective

- Given a prompt, students will write a response indicating their stance on an important aspect of the selection that shows evidence of their engagement with the text and the related content area (social studies).
- In an effort to merge her English language arts and social studies curricula, Ms. Carson, designed the following writing assignment:
- Would it be understandable for Sadako's family to blame the U.S. for Sadako's death? Why or why not? Think about our studies of World War II as you develop your answer. Give reasons and examples (evidence from the text) to support your answer.

Initial Writing Activity

Ms. Carson first gave her students 20 minutes to organize their thoughts using a graphic organizer. After that, she gave the students 30 minutes to write their responses to the above writing prompt. She then collected their work.

> The following is a response from Caroline, a student in her class:
>
> No because it was thier states fault, they didnt know about the leukimia after the bomb, and the japanese people wanted the war.
>
> It was the states fault because they were going to drop their bomb first and the US made a choice, they had to drop a bomb befor the US inocences get hurt by thiers. The Japanese people Just want victory but they don't always win.
>
> The U.S didnt know the event after the bomb. After 10 years from the bomb the posion spread wich no one knew and it gave kids leukimia.
>
> The Japanese people wanted the war because Japan wanted world domination and become ruler of the world so they did want it when they know the worlds big and you have to fight war in all the states.

Structured Small-Group Collaborative Discussions

Ms. Carson told her students that they would be reflecting on their initial written stances to the question in conversation with one another. For this activity, Ms. Carson divided her class into heterogeneous groups of six students. Each group had students at varying levels of English language proficiency. She also tried to group children by primary language background. For example, in one group, three students were native Spanish speakers and three others were native English speakers. The Spanish-speaking children ranged from the least English-proficient members of the group to the most. This way, if something could have been better expressed by a student in Spanish, then often another student from the group could provide a quality translation.

Exhibit 3.5. Instruction in text-based writing activity *(continued)*

Ms. Carson monitored students in their discussion groups to ensure that her students remained centered on the topic at hand, and that their talk was critically oriented to the Sadako text and the social studies content. Consider the following exchange, where Ms. Carson helped mediate a point of confusion between two students and also provided quick clarification of a key vocabulary term:

> Josefina: *I think the U.S. did that [dropped the atomic bombs on Hiroshima and Nagasaki] to show them a lesson because their government represents the whole state, their whole country, so each part in Japan, so...I think that that was a lesson saying, "Do you want to back down?"*
>
> Katie: *I disagree with Josefina because Japan was trying to do world domination, so they attacked them on purpose, and they just – they wanted them to stop, so they, so they're actually telling them, "You cannot destroy us because we have a bigger military than you, and you cannot stop the U.S., so we're gonna stop you by dropping a bomb."*
>
> Teacher: *So are you, Katie, saying that Sadako's family should not blame the United States or they should?*
>
> Katie: *They should not because it, it was the Japanese. Japan's fault that they dropped the bomb.*
>
> Teacher: *For not surrendering?*
>
> Josefina: *I'm confused. What are you trying to say? Like, so it's the U.S., it's the U.S.'s fault for dropping the bomb? Isn't it their fault that they dropped the bomb at Pearl Harbor?*
>
> Katie: *Well...*
>
> Teacher: *I think, if I may interject, Josefina, while you struggle for what you want to say here. I think you're confused 'cause Katie said she disagreed with you, but I think she actually agreed with you... would that be correct, Katie?*
>
> Katie: *Uh-huh.*
>
> Teacher: *'Cause Katie was saying that Japan wanted world dominance.*
>
> Josefina: *What's dominance?*
> Teacher: *Be in charge of the world. Control the world.*
>
> Marco: *I strongly agree with Katie.*
>
> Kelly: *Yeah, me too.*
>
> Jose: *Katie is saying they deserved that.*

Note that as Ms. Carson routinely uses small-group collaborative discussions, her students know the routines and expectations required for a quality discussion. Ms. Carson has taught her students how to overlook personal issues and engage in respectful discussions in which ideas and arguments are made, heard, and responded to.

Exhibit 3.5. Instruction in text-based writing activity *(continued)*

Revising Written Responses

Ms. Carson redistributed the students' written responses to the prompt. She told her students that they now had the opportunity to revise their work based on questions and comments that arose from the discussions the students had with each other. She gave her students 30 minutes to revise their written responses. Ms. Carson used these writing samples to identify areas of strength as well as areas where additional instruction was needed.

See below for Caroline's revised response after participating in the discussion:

> NO because it was their states fault, the US didnt know about leukimia, they wanted it to happen.
>
> It was Japans fault because Japan wanted world domination but the U.S. would not let them and they wouldnt surrender so the US had no choice but to bomb Japan.
>
> The Japanese surrendered then so the U.S was bombing them to stop war for peace. The US never knew about the leukimia in the bomb. They only dropped the bomb to stop war, not to continue. So it wouldn't be likley that they knew about what happened. It wasn't really their fault but they needed to act quickly befor Japan did something worse.
>
> The Japanese wanted the war, they wanted world domination. They attacked U.S and other horrible things. Showing they want war and on purposeley did the crimes.
>
> As you can see Sadakos parents shouldnt blame the US.

Roadblocks and Solutions

Roadblock 1: *English learners often make errors in so many different aspects of writing (e.g., word order, tense and subject-verb agreement, use of transition words or connecting words to link ideas across overly short sentences) that it may be difficult to determine where to begin, and on what aspects constructive feedback should be provided.*

Solution: The panel believes that it is not necessary to provide feedback on every aspect of a problematic writing sample. After all, the purpose of a writing lesson is to build writing skills and related language skills, not to create a perfect piece of writing. The panel recommends limiting the feedback to one or two aspects that are the focus of the week's writing objectives, such as tense agreement and organization, and ignoring errors in other areas, such as spelling or other aspects of grammar, for that week.

The panel suggests that feedback be specific and always tied to opportunities for further instructional support, practice, and feedback. For example, if capitalization is an area where a large majority of students show evidence of confusion or lack of awareness, begin a writing lesson with a mini lesson targeting capitalization, followed by an opportunity for more practice. Whenever possible, group students with similar problems and provide feedback to those students in a mini-conference format. For instance, there may be a group of students who struggle with varying the

number and types of sentences they write; these students may be writing long, single-sentence streams that connect clauses using *and* or *and then*. While all the students in the class are working independently at their seats on their writing assignment, provide feedback to this group of students on ways to "break up" writing, using students' writing as models. One-on-one instructional conversations are also ideal for discussing one particular problematic aspect of a student's writing (e.g., difficulty in articulating a voice in the writing) or for discussing an individual student's focus and ideas. Follow up feedback sessions with more opportunities for practice.

Roadblock 2: *Teachers may be concerned with the limited amount of writing students produce when they are given an extended writing project.*

Solution: The panel recommends that the emphasis be **not** on how much a student produces but on the work's quality. Remember that a good piece of extended writing is based mostly on planning and research. Students of all levels must engage in the pre-writing process, which involves developing an outline or graphic organizer before writing. This should be the first product that the teacher reviews. For some students with minimal skills in composition, extended work with sentence starters may be the best way to build their writing skill. Regardless of how much text a student produces, there should be opportunities for them to work with documents of all lengths and receive constructive feedback and time to revise their work. Remember to emphasize writing as a process rather than a product.

Roadblock 3: *Designing and implementing effective peer collaborative activities can be difficult.*

Solution: The panel recommends pairing or grouping students in such a way that students of different language proficiency levels work together. In such heterogeneous pairs or groups, peers at higher language proficiency levels can provide excellent language models. As peer groups always tend to deviate from challenging academic tasks and meander toward informal conversations, keep collaborative peer activities productive and on course, monitor frequently (while making constructive suggestions), and keep the peer sessions short. Also, monitor student groups to ensure that all students are benefitting from the grouping arrangement. The panel suggests that teachers consider peer work as an opportunity for students to talk through their ideas and emerging lines of narrative or argumentation rather than for students to provide feedback of a technical nature.

Provide Small-Group Instructional Intervention to Students Struggling in Areas of Literacy and English Language Development

Some students require instructional support in various aspects of literacy and/or English language development above and beyond what typical classroom instruction provides. In the past decade, most school districts have implemented some form of a Response to Intervention (RtI) model to provide such services to students.[116] The panel recommends using these and other types of systems, which emphasize providing small-group instructional interventions for early intervention and support with English learners, because evidence suggests that such interventions are often beneficial to English learners.[117] Depending on the identified needs of students, these interventions can include instruction on not only phonemic awareness and decoding skills but also listening and reading comprehension (especially when involving inferential questions), as well as on sophisticated writing and speaking skills. Not all currently used interventions in literacy (especially for primary grade students) include adequate attention to these areas, and thus they may need to be augmented for English learners.

RtI systems make the implicit assumption that before providing struggling students with supplemental instructional opportunities in small groups based on their needs (i.e., Tier 2

116. Bradley et al. (2011).
117. Burns (2011); Denton, Wexler, Vaughn, and Bryan (2008); Nelson, Vadasy, and Sanders (2011); Ransford-Kaldon et al. (2010); Solari and Gerber (2008); Vaughn et al. (2006).

interventions), schools must provide all students with a solid, core classroom instructional program (i.e., a Tier 1 system).[118] *The first three recommendations in this guide provide guidelines for enhancing the core instructional program to ensure that it is appropriate for English learners.*[119] *In addition, in the primary grades, this core classroom instruction needs to incorporate what we know about effective early reading instruction for all students, including explicit and systematic attention to foundational reading skills (i.e., phonological awareness, phonics, and fluency). Effective core (or Tier 1) instruction is important for reducing the number of students who are identified for supplemental instructional opportunities (or Tier 2 interventions), and to ensure that this supplemental instruction is prioritized for those students who continue to struggle after having received appropriate opportunities to learn language and literacy skills.*

In this recommendation, the panel suggests ways to provide high-quality instructional interventions in literacy and language to small groups of students who are struggling in these areas. This instruction, provided on a daily basis, should be teacher-directed, with ample scaffolds to make learning easier and plenty of opportunities to practice what is being learned.

Summary of Evidence: Moderate

Six studies that met WWC standards provide evidence for this recommendation and for all but one of the suggested *How-to* steps.[120] The interventions tested in these studies focused not only on foundational reading skills but also on vocabulary, listening comprehension, and/or reading comprehension. These six studies resulted in impacts across the domains of pre-reading, reading, vocabulary, and English language development. Across the set of studies, five of the fourteen domain effect sizes were positive, and nine were non-discernible. Given these inconsistent findings, the panel decided on a *moderate evidence* rating for the recommendation.[121]

How to Carry Out the Recommendation

1. Use available assessment information to identify students who demonstrate persistent struggles with aspects of language and literacy development.

The panel suggests using currently available measures, such as standardized tests, district benchmark tests, or English language assessments, to screen and identify students in need of additional instructional support.[122] While it would be ideal to assess English learners along with native English speakers using universal screening systems with some evidence of reliability and predictive validity in literacy, the panel notes that such systems are not available in the areas of oral language and reading and listening comprehension for students in grades K–8. Valid and reliable measures do exist in foundational reading skills that can be used to screen English learners, as well as native English speakers, efficiently (see Recommendation 1 in the 2007 English learner practice guide for additional information on these measures[123]).

118. Gersten et al. (2008).
119. The panel also acknowledges that Tier 1 includes many other components with an evidence base—for example, the evidence base on effective beginning reading instruction.
120. All six studies include multi-component instructional interventions.
121. Although students in Grades 3, 4, and 5 were not included in any of the six studies used to support this recommendation, the panel believes results from the six studies apply to students in Grades K–8.
122. In all six studies included in the evidence base, assessment data were used to identify students with potential problems in language and literacy development (**Burns, 2011; Denton et al., 2008; Nelson et al., 2011; Ransford-Kaldon et al., 2010; Solari & Gerber, 2008; Vaughn et al., 2006**).
123. Gersten et al. (2007).

The panel believes that, for many English learners, the screening process should not end with a brief screening measure that focuses on decoding and phonemic skills. Though this may be a valid indicator that the student needs extra support, in no way does this indicate that the child needs support only in foundational reading skills. Further diagnostic work, including use of information from formative assessments and informal reading assessments, should, in the panel's view, be considered in making decisions about what support students need during small-group instruction and what specific instructional needs should be met.

2. Design the content of small-group instruction to target students' identified needs.

English learners who struggle are likely to be a diverse group, with a variety of strengths and weaknesses. Speaking broadly, struggling English learners are likely to fit into at least two distinct profiles, each of which requires a different mixture of instructional content for effective intervention.

The first group of English learners is likely to struggle with foundational reading skills, though evidence suggests that English learners do not demonstrate difficulties with these skills at a disproportionate rate compared to native English speakers.[124] Nonetheless, this first group of students will need interventions devoted to decoding and accurate fluent reading of connected text. However, many of the students in the first group will likely also need instruction in English language development and comprehension strategies.

The second group of English learners—often a large and disproportionate number (in contrast to native English speakers)—demonstrates adequate foundational reading skills but struggles with comprehension of grade-level texts. Older students in this group may also struggle with fluency, particularly at the passage level.[125] Interventions for these students will require a different mixture of instructional content. These interventions should include little or no emphasis on foundational decoding skills but substantial emphasis on comprehension strategies, listening comprehension, and vocabulary.

The proportion of students demonstrating either of these two profiles will depend, in part, on the quality of Tier 1 instruction (i.e., core classroom instruction) in the students' former and perhaps current school years. In the panel's view, this large, second group of students has needs that are sometimes better addressed through Tier 1 than Tier 2 (i.e., supplemental small group instruction), perhaps through differentiated instruction. The panel recommends that educators look closely at diagnostic data and design small-group supplemental instruction that has an appropriate balance between foundational reading skills, reading comprehension instruction, and language instruction. This may well involve going beyond the content of any one "off-the-shelf" reading intervention curriculum.

124. For a review, see Lesaux, Koda, Siegel, and Shanahan (2006) in National Literacy Panel report.
125. Kieffer and Lesaux (2012).

3. Provide additional instruction in small groups consisting of three to five students to students struggling with language and literacy.

In the panel's opinion, English learners should receive instructional interventions in small groups consisting of three to five students.[126] In the panel's view, small, homogeneous groups are useful when focusing on foundational skills such as phonemic awareness, decoding, fluent reading of connected text, or select areas of English language development that students have not mastered. However, when providing instruction in the areas of writing and oral language, or on more intricate tasks involving listening or reading comprehension, the panel's view is that teachers should consider effective ways to group students heterogeneously. Students in heterogeneous groups are likely to benefit from hearing opinions or oral language expressions from students at different proficiency levels. Monitor progress of students in the groups at least twice a month, and preferably more frequently. Regroup the students as needed based on their progress (e.g., moving students making rapid progress to higher-performing groups based on curriculum-embedded or benchmark tests).

To avoid off-task or other problematic behavior during small-group lessons, and to make efficient use of time, the panel recommends that instruction be fast-paced and that the length of any particular activity be relatively brief. In a 30-minute lesson, the panel suggests including six to eight engaging activities that are connected to the content being covered and the English language skills being emphasized. These activities can maintain students' attention if the overall lesson is fast-paced.

4. For students who struggle with basic foundational reading skills, spend time not only on these skills but also on vocabulary development and listening and reading comprehension strategies.

Use small-group instructional time to address basic foundational skills such as phonemic awareness and decoding, along with complex literacy skills such as vocabulary, reading comprehension strategies, and listening comprehension strategies.[127] Whenever possible, to make more productive use of time, plan instructional activities to address both literacy and language needs simultaneously.[128]

See Exhibit 4.1 for an instructional example that depicts small-group instruction focused on literacy and language. In this example, Ms. Santos, a second-grade teacher, attends to both foundational reading skills and comprehension, and provides the necessary language supports for her struggling English learners.

126. Across the six studies that are part of the evidence base, instruction was provided to students in small groups that ranged in size from two students per group to a maximum of seven students per group (**Burns, 2011; Denton et al., 2008; Nelson et al., 2011; Ransford-Kaldon et al., 2010; Solari & Gerber, 2008; Vaughn et al., 2006).**
127. **Burns (2011); Denton et al. (2008); Nelson et al. (2011); Ransford-Kaldon et al. (2010); Solari and Gerber (2008); Vaughn et al. (2006).**
128. **Burns (2011); Denton et al. (2008); Nelson et al. (2011); Ransford-Kaldon et al. (2010); Solari and Gerber (2008); Vaughn et al. (2006).**

Exhibit 4.1. Addressing literacy and language needs of struggling English learners

Ms. Santos's Small-Group Instruction for Struggling Second-Grade English Learners

Ms. Santos provides daily reading instruction to second-grade English learners in groups consisting of three to five students, five days per week for 30 to 45 minutes. The overarching goal of this instruction is for students in these small groups to practice reading connected text fluently and with comprehension. To keep the lesson engaging for students, Ms. Santos uses six to ten short activities per lesson that cut across essential early-reading areas (phonemic awareness, word recognition, reading connected text, and comprehension). To support comprehension, Ms. Santos and the students typically prepare for the text before reading it by doing a text walk-through or an overview of the text, noting whether salient information such as pictures, drawings, or highlighted text on the cover or within the text give clues as to what the text might be about and whether the text is fiction or nonfiction. A typical lesson begins with word work (e.g., strategies for word recognition), as this is the area where most of the students need extra support. The second part of the lesson is devoted to reading the text fluently, with students taking turns practicing reading with the teacher or with each other (e.g., partner reading).

The last part of the lesson is on specific activities related to comprehension. Through her experience, Ms. Santos has learned that a few core strategies (in particular, retells, sequencing, and summarizing) are beneficial in a small-group format because each student receives multiple opportunities to practice these important strategies. Over time, students have been taught to incorporate story grammar elements and language when they practice comprehension strategies (e.g., retelling a story using terms like *plot* and *character*). When students read informational texts, Ms. Santos has taught them to identify and describe new information they are learning as they read.

Ms. Santos makes sure that all students have opportunities to practice these comprehension strategies daily, both as a small group with the teacher providing feedback, and with a partner, where the partner provides feedback to the student practicing a comprehension strategy. During partner work, Ms. Santos carefully monitors the students to ensure that the conversations are focused and result in rich academic discussions. When necessary, she elaborates, clarifies, and corrects student comments.

During comprehension instruction, Ms. Santos also provides the necessary supports to address her students' language needs. To ensure that all students in the group can be meaningfully engaged in the same lesson content, she moderates the language demands based on the students' language proficiency. For example, she has the more proficient students summarize long sections of the text before less proficient students. In instances when Ms. Santos wants a less proficient student to go first in retelling a new part of the story, she provides support to that student by asking him or her to retell a shorter segment of text than she might ask of a more proficient student. She also has her students first summarize information contained in sentences. She then builds this sentence-level summary systematically into paragraphs as students move through the text, thus allowing for meaningful, cumulative practice.

Ms. Santos also supports her students' language needs by incorporating numerous strategies and activities that are helpful for English learners. One activity she particularly likes is having students practice telling stories based on pictures sequenced in a way that facilitates rich retellings containing a beginning, middle, and end. Also, throughout the lesson, Ms. Santos embeds a number

Exhibit 4.1. Addressing literacy and language needs of struggling English learners *(continued)*

of effective instructional practices for English learners. These include using visuals, gestures, and facial expressions in teaching vocabulary and clarifying meanings. For example, Ms. Santos writes key words and phrases for students to see, and draws story and information maps to track the group's progression through the text. This aids students in comprehending the text and fosters ongoing comprehension activities such as sequencing and retelling.

Small-group instructional interventions also need to emphasize vocabulary, not only from the perspective of building vocabulary but also for the purpose of developing students' English language skills.[129] Students may need instruction in common words (e.g., *over*) and idioms (e.g., *start out*) that are unfamiliar and not typically addressed during whole-class instruction. Common words sometimes have multiple meanings that are often overlooked but are nevertheless important for clarifying the text. For instance, the word *over* in the sentence, "Terrible things have been happening, like a tongue of fire (a comet) flying *over* the night sky," may lead to misconceptions. Some students may think that the comet is flying above the sky rather than through it. Others, whose notion of *over* is that something is finished, would have difficulty making sense of the sentence. Similarly, the idiom *start out* in the sentence, "The Aztecs had *started out* as a wandering people," can, when taken literally, be a source of misunderstanding. Some students may associate *start* with starting a car rather than beginning, as this sentence intends.

The panel does not think it is necessary to teach these words in depth when the focus is on understanding the text's content rather than on building vocabulary. Instead, explain the word quickly by providing a student-friendly definition or a synonym, and draw attention to any root words or cognates so that students can make sense of the text. For instance, in the example with the term *over*, instruction can be brief, and the purpose is not to provide a formal definition of *over* but to explain the use of *over* in the sentence. You might say to the students, "In this sentence, a comet flying *over* the night sky means a comet was flying in the sky, not that the comet was above the sky."

However, there may be times when it is necessary to take certain words and provide additional instruction and practice opportunities. See Exhibit 4.2 to see how Mr. Parker uses mini-lessons to provide additional instruction and build his students' vocabulary skills.

129. **Denton et al. (2008); Nelson et al. (2011); Solari and Gerber (2008); Vaughn et al. (2006).**

Exhibit 4.2. An example of incorporating vocabulary in instructional interventions

Mr. Parker's Mini-Vocabulary Lessons

Mr. Parker believes mini-vocabulary lessons that provide additional vocabulary instruction and practice are essential for building English learners' general academic language skills. These lessons also give students additional opportunities to understand the specific texts that they are working on during the additional reading instruction.

Mr. Parker groups the English learners who are struggling with mastering new vocabulary words, including academic vocabulary, into small groups of three to five students and conducts brief 10- to 15-minute mini-vocabulary lessons that include multiple short-duration activities.

Mr. Parker introduces the word *instructions*, and students practice saying the word and the individual syllables in it.

He then provides the definition of the word *instructions*: Instructions help us understand how to make something or do something. He then provides two examples. He says, "For example, a teacher gives instructions to his students so they know how to do their assignment. Another word for instructions is directions. Another example is how before you play a new game, you have to read the instructions so you know the rules. When students do not know the instructions or directions, they do not know how to finish their work."

Before asking students to write sentences, Mr. Parker shows them how to use the word in three sentences that illustrate the word's range of use.

Finally, Mr. Parker has the students write their sentences in their vocabulary journal. In the last activity, students take their vocabulary cards, which now include the word *instructions*, and complete a graphic organizer that includes other vocabulary terms that have been taught in the mini-vocabulary lesson.

As the goal is to build not only vocabulary but also language skills, when teaching vocabulary, give prompts that require students to respond in a way that will require them to use the English language.[130] So, rather than asking questions that require a simple yes or no answer, give prompts that allow for a more meaningful discussion of the target vocabulary words. With prompts such as those listed in Exhibit 4.3, teachers can not only determine whether students understand the meaning of the words *hot* and *damp*, but also provide an opportunity to build students' expressive language skills. Note that vocabulary activities can be organized and enhanced by the use of semantic maps such as the compare-contrast map of *damp* versus *dry,* or even *damp* versus *hot*.

Exhibit 4.3. Sample vocabulary prompts[131]

- Tell me how *hot* is different from *damp*.
- Tell me what it is like if the light is *dim*.
- It is important that we do not tell *lies*. We must tell the *truth*. If I broke a lamp I would tell the truth and say that I broke the lamp. Tell me about a time when you told the truth about something.

130. Lesaux et al. (2010).
131. Prompts used in interventions in Denton, Anthony, Parker, and Hasbrouck (2004) and **Nelson et al. (2011).**

5. Provide scaffolded instruction that includes frequent opportunities for students to practice and review newly learned skills and concepts in various contexts over several lessons to ensure retention.

Scaffold students' learning by dividing instructional activities into **small, manageable units**.[132] This way, students will have limited information to process and will be able to do so quickly, with a high degree of accuracy. Breaking a task down into smaller parts may be most essential when teaching complex tasks, such as listening comprehension and text-based comprehension. For instance, when promoting listening comprehension with kindergarten students, focus initially on direct recall and summarization before having them make predictions and inferences.[133] Students should initially recall or summarize at the sentence level before they are asked to apply their understanding to those bigger ideas in texts that arise across multiple sentences and paragraphs.

The panel recommends teaching students in an explicit, systematic manner, using **ample modeling and think-alouds** to depict how to complete each instructional task.[134] Show students clearly how to perform a particular task and go over the steps with them, making sure that the thinking processes are overt and visible. For instance, if the goal is to teach students how to answer an inferential question, begin by explaining that often authors do not directly tell us how someone feels or the type of person someone is, or, in some cases, exactly what happens in a story or real event. Instead, they give us clues and critical pieces of information, and we have to figure out what is going on—what the author is really telling us or wants us to know. See Exhibit 4.4 to see how a teacher thinks-aloud the answer to the inferential question, "How would you describe Rosa Parks?"

Exhibit 4.4. Teacher thinking aloud the answer to an inferential question

Text from a Lesson on Rosa Parks and the Montgomery Bus Boycott

> On December 1, 1955, in Montgomery, Alabama, Rosa Parks took the bus home from her job as a seamstress in a department store. She sat in the fifth row, which was designated as the first row of the "colored section." As her ride home continued, the bus became full. When this occurred, the seats in the front of the bus were supposed to be given to white passengers. The bus driver ordered Rosa Parks and three other African Americans to move to the back of the bus so that white bus riders could sit in their seats. Rosa Parks stayed quiet, but refused to give up her seat. She was arrested, but did not resist arrest, and was fined 10 dollars for not giving up her seat to a white person. Parks' courage set off a series of events that changed the United States.

Inferential Question

- How would you describe Rosa Parks?

132. **Burns (2011); Solari and Gerber (2008); Vaughn et al. (2006).**
133. **Solari and Gerber (2008).**
134. **Burns (2011); Denton et al. (2008); Nelson et al. (2011); Ransford-Kaldon et al. (2010); Solari and Gerber (2008); Vaughn et al. (2006).**

Exhibit 4.4. Teacher thinking aloud the answer to an inferential question *(continued)*

Teacher Think-Aloud

In this story a bus driver asked Rosa Parks, an African American woman, to give up her seat to a white person. The author gives us clues about the type of person Rosa Parks was. The author writes that Rosa stayed in her seat; she was quiet and did not resist the police when she was arrested and fined 10 dollars. Based on these clues I would say Rosa was brave or courageous because she knew what the bus driver asked her to do was wrong and unfair, so she showed bravery and courage by staying in her seat, knowing she would be punished. Also, Rosa appeared calm, as she did not struggle when the officer arrested her.

Initially, teachers may model and provide think-alouds often to help students, but over time the goal is to perform them less often, allowing students more opportunities to think aloud their reasoning independently.[135] Teachers should model by making their thinking processes visible at first and then gradually provide opportunities to help students perform the same tasks on their own. Teachers can provide students with prompt cards to help them make their own thinking processes and understandings obvious and overt as they practice. Prompt cards might include phrases such as, "I think that the most important reason that (e.g., Rosa Parks) did (e.g., refused to give up her seat) is _____," "It is most important because_____," or "The evidence in the book on page 3 says _____."

The panel suggests conducting **frequent checks for student understanding** and scaffolding their learning and instructional tasks as needed. Given that English learners are more likely to have an incomplete understanding of instructions, paraphrase complex instructions in a text to help everyone understand. If students are having difficulty with a task or are making errors, **provide immediate corrective feedback**.[136] Consider providing an additional model or abbreviated demonstration of the learning objective, before providing new opportunities for students to practice the skill with additional support and guidance.

The panel recommends **frequent review of previously taught material and frequent practice opportunities**.[137] Revisit and reteach as necessary to clarify misconceptions and reinforce learning. Throughout the small-group time, students should have multiple opportunities to practice using newly acquired skills, such as reading text, using new vocabulary words, and summarizing small portions of text.[138] Because students are learning a new language as well as new content knowledge and skills, they need many practice opportunities to verbalize responses and practice what they learn. The panel recommends giving students a chance to think about content, practice what they have learned, and receive feedback before working with the whole class; these opportunities will increase their confidence when they share their responses with the larger group.

135. **Burns (2011); Denton et al. (2008); Nelson et al. (2011); Ransford-Kaldon et al. (2010); Solari and Gerber (2008); Vaughn et al. (2006).**
136. **Burns (2011); Nelson et al. (2011); Solari and Gerber (2008); Vaughn et al. (2006).**
137. **Burns (2011); Denton et al. (2008); Nelson et al. (2011); Solari and Gerber (2008); Vaughn et al. (2006).**
138. **Burns (2011); Denton et al. (2008); Nelson et al. (2011); Solari and Gerber (2008); Vaughn et al. (2006).**

Roadblocks and Solutions

Roadblock 1: *Educators may be encouraged to use "one-size-fits-all" small-group interventions for students who are struggling. In particular, educators may be tempted to teach intensively foundational word-reading skills for all English learners who are struggling.*

Solution: English learners who struggle often have very diverse needs. Although some students certainly will need additional support in foundational word-reading skills, many others will not. Educators need to look closely at diagnostic data, including formative assessments such as running records and teacher observation, to not only identify students who are struggling, but also determine why students are struggling so that they can be grouped accordingly.[139] One-size-fits-all interventions are unlikely to meet the diverse needs of English learners who struggle. This is particularly true as students move up in the grades and the diversity of their needs increases. Instead, it is valuable to have a portfolio of intervention options so that students receive instruction that is targeted to their identified needs.

Roadblock 2: *In some schools or classrooms, virtually all English learners will demonstrate difficulty with some aspect of language or literacy skills, making Tier 2 small-group supplemental instruction challenging to implement.*

Solution: When screening and diagnostic data indicate that all English learners are demonstrating difficulties with a particular aspect of language and literacy, that aspect is best addressed through Tier 1 classroom instruction.[140] For instance, in a given classroom there are likely to be aspects of grade-level reading comprehension with which a majority of English learners struggle. Teaching such skills should be integrated into typical classroom instruction rather than delegated to Tier 2. That said, such instruction could still be provided in small groups or through cooperative learning while being provided to all English learners rather than just those identified for intervention.

Roadblock 3: *Some teachers may feel that the extra instructional focus on foundational skills may take away instructional time that needs to be devoted to the priorities emphasized in the Common Core State Standards, such as comprehension, close reading of text, and development of academic vocabulary.*

Solution: Although it is true that the Common Core State Standards heavily emphasize student demonstration of reading comprehension and academic language skills, the standards also clearly acknowledge the essential role that acquisition of foundational skills plays in enabling students to concentrate nearly exclusively on comprehension and academic language involving text. Although the Standards do not provide precise specifications for how students are to acquire foundational reading skills, the Standards clearly state that children need to be highly proficient in print concepts, phonological awareness, phonics and word recognition, and fluency. The Standards also emphasize the need to teach these skills to students through Grade 5. The major point is that students require time and instruction to learn and largely master these skills during the elementary school years while concurrently working on the more complex cognitive areas delineated in the Common Core State Standards. It is worth considering expanded instructional time for students who need a good deal of additional support.

139. Berkeley, Bender, Peaster, and Saunders (2009); Burns and Gibbons (2008).
140. Berkeley et al. (2009); Burns and Gibbons (2008).

Glossary

A

Academic vocabulary represents words that are used primarily in the academic disciplines (science, history, geography, mathematics, literary analysis, etc.). These words are used much more frequently in discussions, essays, and articles in these disciplines than in informal conversations and social settings. Academic vocabulary words include both general academic words and domain-specific words. General academic vocabulary words, such as *environment*, *factor*, *exhibit*, *investigate*, *transition*, and *tangential*, are used in writing across many academic disciplines. A word's meaning may shift slightly in different contexts, although occasionally the shift is dramatic. Domain-specific academic vocabulary words are unique to a particular academic discipline; for example, *pi* and *commutative* are linked to mathematics.

C

Cognates are words in two or more languages that share a common origin and that help English learners link English words to their primary languages.

Context clues help students derive personal, yet workable definitions of words using surrounding text they understand.

D

Differentiated instruction is an approach to teaching that provides different students with different ways to acquire the same material, by considering students' varying abilities, learning styles, and interests when designing lessons, support materials, and assessments.

E

English learners (ELs) are students with a primary language other than English who have a limited range of speaking, reading, writing, and listening skills in English.

F

Foundational skills are select areas of English language development that students must master, such as phonemic awareness, decoding, and fluent reading of connected text.

G

Graphic organizers are instructional tools that help students visually represent ideas or concepts or the relationships between them. Some examples of graphic organizers are Venn diagrams, cause/effect organizers, and word maps.

I

In-depth instruction or **Intensive instruction** refers to instruction in words that is intensive across several days using a variety of instructional activities.

L

Language objectives are statements indicating the aspects of the English language that students are going to learn, such as using proper grammar, using compare-contrast text structures, and building sophisticated paragraph structures.

Language-based supports include tools, such as graphic organizers, sentence starters, or writing framework templates that provide students with the support necessary for them to start their writing assignments.

M

Morphology is concerned with word form and structure, such as the way words can be altered by adding prefixes and/or suffixes to change the root word's meaning.

N

Non-examples illustrate what the word *does not* mean.

R

Response to Intervention (RtI) is a model for providing early intervention for students who are at risk for academic failure. The RtI process allows educators to determine which students need special education services based on frequent assessments of student learning rather than on the results of testing done once or twice a year. Special education placement is recommended if a student fails to respond well to instruction in the general education classroom and to subsequent supplemental intervention in the general education classroom.

For RtI to be effective, it must incorporate multiple tiers, each of which provides unique opportunities for students to learn important content but that are linked seamlessly together to ensure all students receive the instruction they need. Providing three tiers of instruction and intervention is the most common RtI model. Tier 1 is the evidence-based instruction used to teach all students, usually through a core instructional program. Tier 2 is supplemental instruction and is typically provided in the general education classroom to students who are not responding to Tier 1 instruction. Tier 2 instruction is usually provided to students in small groups, arranged based on their needs. Tier 3 intervention involves longer-term and more intensive instruction, and is provided to those students who are not responding to Tier 2 intervention.

S

Scaffolded instruction or **scaffolding** is the support provided to students to help them learn concepts or skills when they are first introduced. Teachers can provide a significant amount of support initially, and as student proficiency increases, teachers can gradually reduce the amount of support provided until students can complete tasks independently. In this way, teacher support is systematically replaced with student practice as the instruction progresses.

Student-friendly definitions are more accessible than most dictionary or textbook definitions because they often include examples, non-examples, and/or concrete representations to clarify and pinpoint a word's meaning.

T

Target words are the words a teacher selects for instruction.

Think-aloud refers to a teacher demonstrating how to perform a particular task by talking aloud the steps he or she is taking, making sure that his or her thinking processes are overt and observable.

Think-Pair-Share is an instructional activity used to structure classroom dialogue. Students are asked to think about a topic or question, pair with another student or students to discuss what they think, and then share what they discussed with the rest of the class.

Postscript from the Institute of Education Sciences

What Is a Practice Guide?

The Institute of Education Sciences (IES) publishes practice guides to share evidence and expert guidance on addressing education-related challenges not readily solved with a single program, policy, or practice. Each practice guide's panel of experts develops recommendations for a coherent approach to a multifaceted problem. Each recommendation is explicitly connected to supporting evidence. Using common standards, the supporting evidence is rated to reflect how well the research demonstrates the effectiveness of the recommended practices. Strong evidence means positive findings are demonstrated in multiple well-designed, well-executed studies, leaving little or no doubt that the positive effects are caused by the recommended practice. Moderate evidence means well-designed studies show positive impacts, but there are questions about whether the findings can be generalized beyond the study samples or whether the studies definitively show evidence that the practice is effective. Minimal evidence means that there is not definitive evidence that the recommended practice is effective in improving the outcome of interest, although there may be data to suggest a correlation between the practice and the outcome of interest. (See Table 2 for more details on levels of evidence.)

How Are Practice Guides Developed?

To produce a practice guide, IES first selects a topic. Topic selection is informed by inquiries and requests to the What Works Clearinghouse Help Desk, formal surveys of practitioners, and a limited literature search of the topic's research base. Next, IES recruits a panel chair who has a national reputation and expertise in the topic. The chair, working with IES, then selects panelists to co-author the guide. Panelists are selected based on their expertise in the topic area and the belief that they can work together to develop relevant, evidence-based recommendations. IES recommends that the panel include at least one practitioner with expertise in the topic.

The panel receives a general template for developing a practice guide, as well as examples of published practice guides. Panelists identify the most important research with respect to their recommendations and augment this literature with a systematic search for studies assessing the effectiveness of particular programs or practices. These studies are then reviewed against the What Works Clearinghouse (WWC) standards by certified reviewers who rate each effectiveness study. WWC staff members assist the panelists in compiling and summarizing the research and in producing the practice guide.

IES practice guides are then subjected to external peer review. This review is done independently of the IES staff who supported the guide's development. A critical task for a practice guide's peer reviewers is to determine whether the evidence cited in support of particular recommendations is up-to-date and that studies of similar or better quality that point in a different direction have not been overlooked. Peer reviewers also evaluate whether the level of evidence category assigned to each recommendation is appropriate. After the review, a practice guide is revised to meet any concerns of the reviewers and to gain the approval of the IES standards and review staff.

A Final Note About IES Practice Guides

In policy and other arenas, expert panels typically try to build a consensus, forging statements that all their members endorse. Practice guides do more than find common ground; they create a list of actionable recommendations. Where research clearly shows which practices are effective, the panelists use this evidence to guide their

recommendations. However, in some cases research does not provide a clear indication of what works. In these cases, the panelists' interpretation of the existing (but incomplete) evidence plays an important role in guiding the recommendations. As a result, it is possible that two teams of recognized experts working independently to produce a practice guide on the same topic may come to very different conclusions. Those who use the guides should recognize that the recommendations represent, in effect, the advice of consultants. However, the advice might be better than what a school or district could obtain on its own. Practice guide authors are nationally-recognized experts who collectively endorse the recommendations, justify their choices with supporting evidence, and face rigorous independent peer review of their conclusions. Schools and districts would likely not find such a comprehensive approach when seeking the advice of individual consultants.

Institute of Education Sciences

About the Panel and Research Staff

Panel

Scott K. Baker, Ph.D., is the incoming director of the Center on Research and Evaluation (CORE) at Southern Methodist University. Through June 2013, Dr. Baker was the associate director of the Center on Teaching and Learning (CTL) at the University of Oregon, and from 2006 to 2012 he was CTL's first director of research. He was the founder of Pacific Institutes for Research, and from 2003 to 2010 was its executive director and president. His research interests are literacy assessment and instruction in mathematics and reading, focusing specifically on underserved populations, including English learners and students at risk for academic difficulties. He is interested in the mechanisms that underlie successful learning outcomes for students, including curriculum design, interactive instruction, formative assessments, and professional development. Dr. Baker has been a principal investigator on nine grants funded by the Office of Special Education Programs and nine grants funded by the Institute of Education Sciences. These grants have focused on developing and evaluating assessment and instructional interventions for different groups of students, including English learners and students with learning difficulties, and on ways to ensure that these practices and interventions are implemented effectively in real school settings. Much of Dr. Baker's current work focuses on issues related to instruction and intervention systems in schools. Dr. Baker has also conducted several meta-analyses and other research syntheses, targeting interventions in reading, mathematics, and writing for English learners, students with academic difficulties including students with learning disabilities, and students struggling with reading comprehension.

Esther Geva, Ph.D., is a professor in the Department of Applied Psychology and Human Development at the Ontario Institute for Studies in Education of the University of Toronto (OISE/UT). In her formative years she studied in Israel, the United States, and Canada, and taught English as a foreign language in Israel. The primary focus of Dr. Geva's research, funded by Canadian federal and provincial funding agencies, is the development of language and literacy skills in children and adults coming from various linguistic backgrounds. Within the framework of longitudinal and intervention studies, and with her collaborators and graduate students, she examines the developmental trajectories and predictors of language and literacy development in typically developing and struggling second language learners, and approaches to intervention. Dr. Geva has published numerous chapters and articles on second language literacy skills and the assessment of normally developing and reading-disabled bilinguals and English learners. She has presented her work internationally and served on numerous advisory, policy, and review committees in the United States and Canada that focused on language and literacy development in minority children.

Michael J. Kieffer, Ed.D., is an associate professor of literacy education at the Steinhardt School of Culture, Education, and Human Development at New York University. He studies the language and literacy development of students from linguistically diverse backgrounds. A former middle school teacher, he conducts research that aims to inform instruction and policy to improve the reading outcomes of students in urban schools, especially adolescent English learners. Dr. Kieffer's research has included longitudinal studies of the reading and language development of English learners, experimental and quasi-experimental evaluations of academic vocabulary instruction, and secondary analyses of large longitudinal datasets. His current research interests include metalinguistic skills involved in vocabulary learning, sources of reading comprehension difficulties, and the role of attention in second-language reading. Dr. Kieffer's research has been supported by grants from the Spencer Foundation, National

Academy of Education, American Educational Research Association, and International Reading Association. Dr. Kieffer has received the International Reading Association's Dina Feitelson Research Award, NYU's Griffiths Research Award, and the Spencer Foundation's Exemplary Dissertation Award. He received his doctorate from Harvard Graduate School of Education in 2009.

Nonie K. Lesaux, Ph.D., is a professor of education at the Harvard Graduate School of Education and leads a research program guided by the goal of increasing learning opportunities for students from diverse linguistic, cultural, and economic backgrounds. Dr. Lesaux's research and teaching focus primarily on the cognitive and linguistic factors that enable children and adolescents to read effectively. Her research has included longitudinal studies investigating reading and language development among English learners, as well as intervention studies focused on academic vocabulary instruction. Dr. Lesaux is currently principal investigator of a longitudinal study investigating linguistically diverse children's cognitive, socio-emotional, and literacy development. Her research on reading development and instruction, as well as her work on using data to prevent reading difficulties, inform setting-level interventions and public policy at the state and national levels. This work's practical applications are featured in several publications written for education leaders and practitioners, including one book and one widely circulated state-level literacy report, the latter of which forms the basis for a third-grade reading proficiency bill passed by the Massachusetts House of Representatives. Dr. Lesaux's scholarship has resulted in two prestigious early-career awards: the William T. Grant Foundation Faculty Scholars Award and the Presidential Early Career Award for Scientists and Engineers, awarded by the U.S. government.

Sylvia Linan-Thompson, Ph.D., is an associate professor at the University of Texas at Austin. She is currently principal investigator on a model demonstration project identifying the implementation of Response to Intervention (RtI) with English learners in bilingual schools. Her research interests include examining appropriate instructional and assessment practices for English learners, particularly those practices related to the acquisition of reading skills and implementation of RtI. Dr. Linan-Thompson has also developed and examined reading interventions for struggling readers who are monolingual English speakers, English learners, and bilingual students acquiring Spanish literacy. Additionally, since 2003 she has been a consultant on various projects related to literacy instruction and teacher professional development in Latin America, Africa, Asia, and Eastern Europe; and has authored articles, chapters, instructional guides, and books on these topics.

Joan Morris, M.A., is a teacher specialist at the Pasadena Unified School District. She has worked with English learners throughout her career at the Pasadena Unified School District. Ms. Morris has taught in bilingual classrooms (Spanish/English), a Structured English Immersion Classroom, and a mainstream classroom. She also worked as a language development resource teacher, and, as such, was responsible for overseeing English learner programs at an elementary school. For the past 12 years, Ms. Morris has worked at the District office as a language development specialist, as a teacher on special assignment, and as the coordinator of English Learner Programs. Duties at the District office have included writing the *Master Plan for English Learner Programs*, overseeing professional development for classroom teachers and administrators, and coordinating the federal program monitoring visits as well as the California English Language Development Test (CELDT). Ms. Morris established a Newcomer Center for Secondary English learners and brought the Seal of Biliteracy, an award given to graduating seniors who prove their proficiency in English and another language, to the District.

C. Patrick Proctor, Ed.D., is an associate professor of literacy and bilingualism at the Boston College Lynch School of Education. He

is a former third- and fourth-grade bilingual teacher and currently leads a research program focused on the language and literacy development of elementary school-aged children from immigrant and bilingual homes, with a particular interest in how that development is affected by classroom instruction. Dr. Proctor's theoretical research focuses on models of bilingualism, language development, and reading comprehension, and the intersections between them. His work has targeted the crucial role of oral language proficiency in predicting reading comprehension, and whether and how first-language proficiency informs development of language and reading comprehension in the second language. In his research on praxis, Dr. Proctor has co-developed an English vocabulary and comprehension intervention for fifth-grade multilingual students. He currently works with principals and teachers in the Boston Public Schools on a long-term initiative designed to promote reflective literacy instructional practice, using collaborative discussions to promote language development, reading comprehension, and writing competence. Dr. Proctor's research has been funded by the Institute of Education Sciences, the U.S. Department of Education, the William and Flora Hewlett Foundation, and Boston College.

Randi R. Russell, M.S., NBCT, is a curriculum support specialist with the Division of Bilingual Education and World Languages in Miami-Dade County Public Schools, where she supports teachers of English learners in grades K–12 with best practices, including professional development, modeling of lessons, application of technology, and the use of data to drive instruction. During her 27-year tenure with Miami-Dade County, Ms. Russell has worked with students in grades K–12. She previously worked with adults, university students, and secondary school students in Bogotá, Colombia. She holds a Bachelor's degree in Spanish and French from Rollins College and a Master's degree in Reading from Nova Southeastern University. Ms. Russell attended La Universidad de Los Andes in Bogotá, Colombia, where she studied Spanish Literature. She is also National Board-certified in English as a New Language. She was awarded two Teacher of the Year awards, served on the Florida State Instructional Materials Committee for ESOL K–5 (2008–2009), and served on the State of Florida's English Language Proficiency (ELP) Standards Writing Committee (2012). She participated in the *Education Week* webinar "Spurring Latino Growth" (June, 2012), and her work has been published on the State's Common Core lesson bank for middle school teachers (C-PALMS). Ms. Russell served as an ELL presenter in Florida's Common Core State Standards Summer Institute (2013).

Research Staff

Russell Gersten, Ph.D., is the executive director of the Instructional Research Group, an educational research institute, as well as professor emeritus of special education in the College of Education at the University of Oregon. He chaired the panel that conceptualized and wrote the first *Practice Guide on Literacy and Language Instruction for English Language Learners*. He chaired two other practice guides on RtI in mathematics and reading. In addition, he served as the principal investigator for the English learner component of the What Works Clearinghouse for the first 11 years of the project. Dr. Gersten is nationally renowned for his knowledge, design, and implementation of research studies with experimental and quasi-experimental designs, and for his research synthesis on translating research into classroom practice. In 2002, Dr. Gersten received the Distinguished Special Education Researcher Award from the American Educational Research Association's Special Education Research Division, and in 2013 he received the Special Education Research Award from the Council for Exceptional Children. He has advised on a variety of reading projects using randomized trials in education settings, and has written extensively about the importance of randomized trials in special education research. To date, he has published more than 150 publications. He currently

serves on the editorial boards of many prestigious journals in the field, and is editor-in-chief of *The Elementary School Journal*. He served as a member of the presidentially appointed National Mathematics Advisory Panel, a committee to develop research-based policy in mathematics for American schools.

Joseph Dimino, Ph.D., is the deputy executive director of the Instructional Research Group. He has had experience as a general education teacher, special education teacher, administrator, behavior consultant, and researcher. As a co-principal investigator, he developed and conducted professional development for a study assessing the impact of Collaborative Strategic Reading on English learners and fluent English-speaking fifth-graders' comprehension and vocabulary skills. He held a similar role for a study investigating the impact of Teacher Study Groups on observed teaching practice and student vocabulary knowledge. Dr. Dimino has extensive experience developing and providing professional development to teachers, administrators, instructional assistants, and parents, in the areas of early reading intervention, vocabulary instruction, reading comprehension strategies, and classroom and behavior management. He served as one of the seven professional development staff members for the National Center on Student Progress Monitoring. Dr. Dimino was a panel member for the Response to Intervention (RtI) reading practice guide and researcher for the RtI mathematics practice guide. In April 2011, he was appointed as a panel member for the practice guide on foundational reading skills. Dr. Dimino has co-authored books in reading comprehension, early reading interventions, and vocabulary instruction. He consults nationally in the areas of early literacy and vocabulary and reading comprehension instruction, and presents at state, national, and international conferences. Dr. Dimino has published in numerous peer-reviewed scholarly journals, such as *American Education Research Journal*, *Exceptional Children*, *Reading Research Quarterly*, *Journal of Learning Disabilities*, *Remedial and Special Education*, and *Learning Disabilities Research and Practice.*

Madhavi Jayanthi, Ed.D., is a senior research associate at the Instructional Research Group. Dr. Jayanthi has worked extensively on two What Works Clearinghouse practice guides—*Multi-Tier Intervention in the Primary Grades, Assisting Students Struggling with Mathematics: Response to Intervention (RtI) for Elementary and Middle Schools* and *Improving Mathematical Problem Solving in Grades 4 through 8*. She is the co-principal investigator of an IES-funded grant studying the impact of the Teacher Study Group on vocabulary, and the co-principal investigator of a randomized controlled trial to study mathematics professional development in fractions for the Regional Education Lab–Southeast. Dr. Jayanthi currently serves as co-editor of *The Elementary School Journal*. She has published research findings in many well-respected journals, including *American Educational Research Journal*, *Review of Educational Research*, *Remedial and Special Education*, and *Learning Disabilities Research and Practice.*

Rebecca Newman-Gonchar, Ph.D., is a senior research associate at the Instructional Research Group. As a certified reviewer for the What Works Clearinghouse, Dr. Newman-Gonchar has reviewed and analyzed experimental studies since 2008 and single-case design studies since 2010. She was an integral part of the teams that developed four IES practice guides: *Effective Literacy and English Language Instruction for ELs in the Elementary Grades*; *Assisting Students Struggling with Reading: Response to Intervention (RtI) and Multi-Tier Intervention in the Primary Grades*; *Assisting Students Struggling with Mathematics: Response to Intervention (RtI) for Elementary and Middle Schools*; and *Improving Mathematical Problem Solving in Grades 4 through 8*. Dr. Newman-Gonchar has also worked on numerous intervention reports for the English learner topic area. As a key member of the IRG research team, Dr. Newman-Gonchar currently serves as a co-principal

investigator for an IES-funded, randomized field trial of the Teacher Study Group professional development model.

Kelly Haymond, M.A., is a research associate at the Instructional Research Group and a Ph.D. student in psychology at Claremont Graduate University in Claremont, California. She currently serves as a reviewer of experimental and single-case designs covering a range of topics, including English learners, reading and mathematics interventions, Response to Intervention, and adult education, for the What Works Clearinghouse. Ms. Haymond has experience providing research support and conducting data analysis for various projects on topics related to reading, mathematics, assessment, Response to Intervention, and professional development. Currently, she contributes to several projects to improve reading and mathematics instruction in elementary schools.

Appendix C

Disclosure of Potential Conflicts of Interest

Practice guide panels are composed of nationally recognized experts on the topics about which they are making recommendations. IES expects the experts to be involved professionally in a variety of matters that relate to their work as panelists. Panel members are asked to disclose these professional activities and institute deliberative processes that encourage critical examination of their views as they relate to the content of the practice guide. The potential influence of the panel members' professional activities is further muted by the requirement that they ground their recommendations in evidence that is documented in the practice guide. In addition, before all practice guides are published, they undergo an independent external peer review focusing on whether the evidence related to the recommendations in the guide has been presented appropriately.

The professional activities reported by each panel member who appears to be most closely associated with the panel recommendations are noted below.

Sylvia Linan-Thompson is an author and receives royalties from NGS Reach, an ESL program, and NGS Reach for Reading, a reading program. She also receives royalties from McGraw-Hill Early Reading Interventions, a reading intervention program with modifications for English learners, and *Intervenciones tempranas de la lecture 2012*. She was a consultant on Voyager Pasaporte.

Nonie Lesaux is a contributing author to two National Geographic curricula, Reach and Reach for Reading. She also receives royalties for her book *Making Assessment Matter: Using Test Results to Differentiate Reading Instruction*, published by The Guilford Press.

Rationale for Evidence Ratings

Appendix D provides details on the literature search conducted to update the evidence base for the current practice guide, and describes the studies that the panel used to determine the evidence base for the four recommendations in this guide.

Methodology for the Literature Search

A comprehensive literature search of electronic databases, such as ERIC and Social Science Index, was conducted for literature published between January 2006 and September 2012. The search used keywords related to English learners (e.g., "English learners," "limited English speaking," "limited English proficiency," "non-English speaking"). An additional search of the electronic databases was also conducted for publications published between January 1989 and September 2012. This search specifically covered the topics of writing, oral language, and content-area instruction, as the earlier guide did not focus on these topics. The search was supplemented with studies recommended by the panel and select experts from the field. A grey literature search was also carried out to capture any unpublished research literature, by searching corporate, institutional, and agency websites, as well as grey literature gateways such as OIAster.

The search identified a total of 1,405 studies; of these, 55 studies met screening criteria and were reviewed according to the *What Works Clearinghouse (WWC): Procedures and Standards Handbook (v. 2.1)*.[141] Of the 55 studies that were reviewed, 15 met the WWC's causal validity standards and were related to the panel's recommendations.[142]

Screening Criteria

Design. Studies that examined the effectiveness of recommended practices using designs that allowed for causal inference—randomized controlled trials and rigorous quasi-experimental designs that met WWC standards (with or without reservations)—were used to determine the level of evidence, and are discussed here. Although the panel believes that qualitative studies, case studies, and other correlational studies contribute to the literature, these studies do not allow for causal inference and were not eligible for WWC review. As such, they do not affect the level of evidence and are not included in this appendix.

Search Years. For the original practice guide, the literature search included studies published between 1989 and 2006. The literature search was extended to include studies published through September 2012 in the following manner:

- For recommendations from the original guide that the panel decided to carry over in some form, the studies cited in the original guide (those published between 1989 and 2006) were reviewed again using current WWC standards. In addition, the literature search was extended to include studies published through September 2012.
- For recommendations that were not mentioned in the original guide and did not have any supporting studies from it, a literature search was conducted to locate studies published between 1989 and September 2012.

141. What Works Clearinghouse (2011).
142. Eligible studies that meet WWC evidence standards or meet evidence standards with reservations are indicated by **bold text** in the footnotes and references pages.

Sample. Only studies with students in grades K–8 residing in the U.S., its territories, its tribal entities, or Canada were included. Studies that contained students from other grades (e.g., pre-K or high school) were not included unless (a) the study findings disaggregated the results of students in eligible grades or (b) students in eligible grades represented over 50% of the aggregated mixed-age sample. Also, the study sample had to include English learners: that is, either (a) all participants had to be English learners or (b) the sample included both English learners and native English speakers, but more than 50% of the sample was identified as English learners.

Language of Instruction. Only studies in which English was the primary language of instruction were included since the focus was on learning academic material or building proficiency in English as a student's second language. Studies in which a student's primary language was used occasionally to support learning were included after determining that the majority of the instruction was in English.[143]

Relevant Measures and Outcomes

Relevant outcomes are measures of student achievement, including nationally normed tests, other standardized tests, and researcher-developed measures, in the following six domains: pre-reading, reading, vocabulary, English language development, writing, and content-area acquisition for areas such as mathematics and history.

1. Pre-reading (for kindergarten only). Pre-reading outcomes include measures of:
   - Letter recognition (letter naming),
   - Letter sounds,
   - Rhyming,
   - Beginning sounds, and
   - Phonological awareness (e.g., onset rime, phoneme segmentation, blending phonemes).

2. Reading. Reading outcomes include measures of:
   - Word reading (including pseudo-word reading),
   - Oral or silent reading fluency and/or accuracy in reading connected text,
   - Reading comprehension, and
   - Measures of overall reading achievement.

3. Vocabulary (including academic vocabulary). Vocabulary includes measures of:
   - Receptive vocabulary (oral and written), and
   - Expressive vocabulary.

4. English language development. English language development includes measures of:
   - Listening comprehension,
   - Grammar/syntax, and
   - Other linguistic features of the English language.

5. Writing. Writing outcomes include measures of:
   - Overall writing quality,
   - Writing output,
   - Mechanics,
   - Organization, and
   - Sentence structure.[144]

143. This determination was made based either on the information provided in the publication or after contacting the authors.

144. Writing outcomes used in this guide are based on the review protocol that was used to review the research for a recently published WWC practice guide: Graham, S., Bollinger, A., Booth Olson, C., D'Aoust, C., MacArthur, C., McCutchen, D., & Olinghouse, N. (2012). *Teaching elementary school students to be effective writers: A practice guide* (NCEE 2012-4058). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education. Retrieved from http://ies.ed.gov/ncee/wwc/pdf/practice_guides/writing_pg_062612.pdf.

6. Content-area acquisition. Content-area acquisition includes measures of:
   - Science, and
   - Social studies.[145]

Reporting Effect Sizes and Significance

In this practice guide, a result from a study is classified as having a positive or negative effect when it meets either of the following criteria:

- The result is statistically significant ($p \leq 0.05$) or marginally statistically significant ($0.05 < p \leq 0.10$).
- The result is substantively important, as defined by the WWC (effect sizes larger than 0.25 or less than -0.25).[146]

A result is classified as having "no discernible effects" if neither of the above two criteria are met.

The *p*-values presented for each study in the evidence base are author-reported values, unless noted otherwise. In some instances, the *p*-values have been calculated by the WWC to correct for clustering within classrooms or schools, and for multiple comparisons within a domain. For an explanation, see Appendix C of the WWC handbook.[147] See the Technical Details of WWC-Conducted Computations for the formulas the WWC used to calculate the statistical significance.[148]

When multiple posttest outcome measures were administered within a domain, an overall average effect size for that domain is reported. The WWC-computed average effect size is a simple average rounded to two decimal places.

Recommendation 1: Teach a Set of Academic Vocabulary Words Intensively Across Several Days Using a Variety of Instructional Activities

Level of Evidence: Strong

The panel assigned a rating of *strong evidence* to this recommendation based on six studies (five randomized controlled trials and one quasi-experimental) that met WWC standards. (See Table D.1 for a list of these six studies and details regarding the intervention, sample, outcomes, and impacts.) The studies mainly entail instruction in the intermediate grades and middle school. The one exception involves students in the primary grades (pre-K–2).[149] Although students in Grades 3, 4, and 8 were not included in any of the six studies used to support this recommendation, the panel believes results from the six studies apply to students in Grades K–8.

All studies were conducted in integrated settings involving English learners and native English speakers. In four studies, impacts were calculated for the English learner subsample.[150] In two other studies, impacts were calculated for all the students (English learners and native English speakers).[151] However, in both these studies English learners constituted over 60% of the sample.

145. Although the search included studies on mathematics and other disciplines, none were located that passed WWC standards.
146. Recognizing that some studies lack the statistical power to classify practically important effects as statistically significant, the panel also accepts substantively important effects as evidence of effectiveness.
147. What Works Clearinghouse (2011). *Procedures and standards handbook (v. 2.1): Appendix C.*
148. What Works Clearinghouse (2011). *Procedures and standards handbook (v. 2.1): Appendix D.*
149. **Silverman and Hines (2009).** Although students from pre-K to Grade 2 constituted the sample, the majority of the student sample was from K-2.
150. **August et al. (2009); Lesaux et al. (in press); Silverman and Hines (2009); Vaughn et al. (2009).**
151. **Carlo et al. (2004); Lesaux et al. (2010).**

Three of the six studies directly tested the practice articulated in this recommendation with fifth- and sixth-grade students.[152] The sole independent variable in these studies was rich, in-depth vocabulary instruction. In these studies, the effectiveness of teaching students a small set of target academic words intensively across several days using a variety of instructional activities was compared to business-as-usual vocabulary instruction. The three studies resulted in mainly positive impacts, either statistically significant or substantive, for outcomes in the domains of vocabulary and English language proficiency. A non-discernible impact was observed in the reading domain.

In two other studies,[153] explicit academic vocabulary instruction was only one component of relatively comprehensive interventions that focused on improving both comprehension and academic vocabulary in content-area classes. One study that focused on teaching science to sixth-grade students found a statistically significant and substantive effect for vocabulary.[154] The second study, conducted in seventh-grade social studies classes, included two experiments.[155] Although the second experiment essentially replicated the first one, the second study did not replicate the substantive effects found in the first experiment.

The sixth study was conducted in grades pre-K–2.[156] It provides positive evidence in support of one instructional aspect articulated in this recommendation: clarifying academic vocabulary using video clips. The authors examined the added benefit of using video clips to clarify target academic words and found substantively important impacts for English learners.

Overall, across the six studies, the preponderance of positive impacts (statistically significant and/or substantively important) and lack of statistically significant negative effects, combined with the panel's high degree of confidence in the effectiveness of the practice described in this recommendation, resulted in the assignment of a *strong evidence* rating for this recommendation. Although a few non-discernible effects were found in some studies, no negative impacts were found in the full set of studies.

Evidence Supporting Specific Instructional Practices

All six studies were complex multi-component interventions that included a variety of instructional features. Many of these instructional aspects are part of the practices suggested in this recommendation. The sections below present a summary of the instructional features and the supporting studies.

Selection of Informational Texts and Target Academic Words. In all six studies, instruction focused on a set of target academic vocabulary words within the context of informational text (typically a science text or social studies text). In four studies,[157] the texts were selected on the basis of certain specific criteria (e.g., interesting and engaging, readable at grade level, providing opportunities for teaching academic vocabulary). Five of the six studies articulated the criteria for selecting the target words.[158] Words were selected if they were central to understanding the text,[159] occurred frequently,[160] had potential

152. Carlo et al. (2004); Lesaux et al. (2010); Lesaux et al. (in press).
153. August et al. (2009); Vaughn et al. (2009).
154. August et al. (2009).
155. Vaughn et al. (2009).
156. Silverman and Hines (2009).
157. Carlo et al. (2004); Lesaux et al. (2010); Lesaux et al. (in press); Silverman and Hines (2009).
158. August et al. (2009); Carlo et al. (2004); Lesaux et al. (2010); Lesaux et al. (in press); Silverman and Hines (2009).
159. August et al. (2009); Lesaux et al. (in press); Silverman and Hines (2009).
160. August et al. (2009); Carlo et al. (2004); Lesaux et al. (2010); Lesaux et al. (in press).

for appearing in multiple content areas,[161] had multiple meanings,[162] included affixes,[163] or had potential for cognate relationships.[164] Thus, this component consistently recurs in the effective vocabulary interventions.

Explicit, In-Depth Instruction in Academic Vocabulary. All six studies taught target academic vocabulary explicitly and in-depth in the context of an informational text. All target words were defined using simple, student-friendly definitions. Words were also clarified further by teaching multiple meanings (also known as *polysemy*) of words like *can*, *factor*, and *power*,[165] by providing examples,[166] and by providing visuals.[167] In one study in particular, the authors examined the use of video clips to clarify target academic words and found positive (substantively important) impacts.[168]

Activities to Promote Word Learning. All six studies used a variety of instructional activities to help students apply and review learned words. For example, students in four studies were provided with opportunities to respond to questions that required them to show their understanding of the nuances in word meanings and of how words can be used in different contexts.[169] In three studies, structured discussions were held to increase opportunities for students to talk about academic words.[170] In two studies, students were required to use the target academic words in their writing activities.[171] Finally, in three studies, students were engaged in activities such as cloze tasks, sketching, and crossword puzzles.[172]

Instruction in Word-Learning Strategies. In four studies, the interventions focused on teaching students strategies for determining the meaning of unknown words.[173] Students were taught to determine word meaning by looking at context clues, that is, how to use the surrounding text to determine word meaning. In addition, English learners were taught to use cognates (words that are similar to those in their primary language) and word parts such as root words and affixes. Three studies covered all three of these strategies;[174] the fourth and remaining study addressed only cognates and word parts.[175]

161. Carlo et al. (2004); Lesaux et al. (2010); Lesaux et al. (in press).
162. Lesaux et al. (2010); Lesaux et al. (in press).
163. Carlo et al. (2004).
164. Carlo et al. (2004).
165. Carlo et al. (2004); Lesaux et al. (2010); Lesaux et al. (in press).
166. Lesaux et al. (2010); Lesaux et al. (in press); Silverman and Hines (2009); Vaughn et al. (2009).
167. August et al. (2009); Lesaux et al. (2010); Lesaux et al. (in press); Silverman and Hines (2009); Vaughn et al. (2009).
168. Silverman and Hines (2009).
169. Carlo et al. (2004); Lesaux et al. (2010); Lesaux et al. (in press); Silverman and Hines (2009).
170. Lesaux et al. (2010); Lesaux et al. (in press); Vaughn et al. (2009).
171. Lesaux et al. (2010); Lesaux et al. (in press).
172. Carlo et al. (2004); Lesaux et al. (2010); Lesaux et al. (in press).
173. August et al. (2009); Carlo et al. (2004); Lesaux et al. (2010); Lesaux et al. (in press).
174. Carlo et al. (2004); Lesaux et al. (2010); Lesaux et al. (in press).
175. August et al. (2009).

Table D.1. Studies providing evidence for Recommendation 1 (academic vocabulary)

Study	Comparison	Duration	Student Sample	Outcome		
				Domain	Individual Measures (Effect Size and Significance Level)	Domain Effect Size
August, Branum-Martin, Cardenas-Hagan, and Francis (2009) RCT	Intervention focused on science knowledge and academic vocabulary (Quality English and Science Teaching-QuEST) vs. business-as-usual condition.	Approximate total time: 30 hours Five 40-minute lessons/ week for 9 weeks	562 EL in Grade 6	Vocabulary	Researcher-developed ▪ Vocabulary Measure (ES = 0.26*)	0.26*
Carlo et al. (2004)[a, b] RCT	Intervention focused on academic vocabulary vs. business-as-usual condition.	Approximate total time: 30-45 hours Four 30-45 minute instruction/ week for 15 weeks	254 students in Grade 5 62% of sample were EL (142 out of 254 total students)	Vocabulary	Researcher-developed ▪ Word Association (ES = 0.34 *ns*)	0.34 *ns*
Lesaux, Kieffer, Faller, and Kelley (2010)[a] QED	Intervention focused on academic vocabulary (Academic Language Instruction for All Students-ALIAS) vs. business-as-usual condition.	Approximate total time: 54 hours Four 45-minute lessons/ week for 18 weeks	476 students in Grade 6 72% of sample were EL (346 out of 476 total students)	English language development	Researcher-developed ▪ Morphological Decomposition Task ▪ (ES = .22*)	0.22*

Table D.1. Studies providing evidence for Recommendation 1 (academic vocabulary) *(continued)*

Study	Comparison	Duration	Student Sample	Outcome		
				Domain	Individual Measures (Effect Size and Significance Level)	Domain Effect Size
Lesaux, Kieffer, Kelley, and Harris (in press)[a, b, c] RCT	Intervention focused on academic vocabulary (Academic Language Instruction for All Students-ALIAS) vs. business-as-usual condition.	Approximate total time: 75 hours Five 45-minute lessons/week for 20 weeks	1,365 EL in Grade 6	Vocabulary	Researcher-developed ▪ Academic Word Mastery (ES = 0.69*) ▪ Word Association (ES = 0.27 *ns*)[d] ▪ Academic Word Meanings-in-Context ▪ (ES = 0.22 *ns*)	0.39*
				English language development	Researcher-developed ▪ Morphological Decomposition ▪ (ES = 0.39*) ▪ Morphological Derivation (ES = 0.15 *ns*)	0.27 *ns*
				Reading	Researcher-developed ▪ Comprehension of Expository Text including Academic Words (ES = 0.09 *ns*) ▪ Standardized ▪ Gates MacGinitie Reading Comprehension Test (ES = -0.02 *ns*)	0.04 *ns*

Table D.1. Studies providing evidence for Recommendation 1 (academic vocabulary) *(continued)*

Study	Comparison	Duration	Student Sample	Outcome		
				Domain	Individual Measures (Effect Size and Significance Level)	Domain Effect Size
Silverman and Hines (2009)[b] RCT	Multimedia (videos) enhanced science vocabulary instruction vs. non-multimedia science vocabulary instruction.	Approximate total time: 27 hours Three 45-minute lessons/week for 12 weeks	27 EL in Grades pre-K–2	Vocabulary	Researcher-developed ▪ Target Vocabulary Assessment (ES = 0.52 *ns*) ▪ Standardized ▪ Peabody Picture Vocabulary Test -III (ES = 0.55 *ns*)	0.53 *ns*
Vaughn et al. (2009)[b] RCT	Intervention focused on vocabulary and comprehension in social studies vs. business-as-usual condition.	Approximate total time: 37.5-50 hours Five 50-minute lessons/week for 9-12 weeks	Study 1: 97 EL in Grade 7	Vocabulary	Researcher-developed ▪ Social Studies Vocabulary (ES = 0.57~)	0.57 ~
			Study 2: 106 EL in Grade 7	Vocabulary	Researcher-developed ▪ Social Studies Vocabulary (ES = 0.03 *ns*)	0.03 *ns*

Note. RCT = randomized controlled trial; EL = English learner; QED = quasi-experimental design.

[a] The WWC obtained the information to calculate an effect size through correspondence with the authors.

[b] WWC calculated the statistical significance.

[c] The effect sizes and statistical significance reported here do not include the imputed student data reported in the study.

[d] A correction for multiple comparisons was needed and resulted in a WWC-computed critical *p*-value of 0.033 for the Word Association test. The WWC calculated *p*-value was .05; therefore, the WWC does not find the individual results to be statistically significant.

* = $p < 0.05$. ~ = $p < 0.10$. *ns* = not statistically significant. When appropriate, the statistical significance values have been corrected for clustering, to account for mismatch between the unit of assignment and unit of analysis, and for multiple comparisons. Effect sizes of 0.25 or greater are considered to be substantively important regardless of statistical significance according to WWC Standards v. 2.1.

Recommendation 2: Integrate Oral and Written English Language Instruction into Content-Area Teaching

Level of Evidence: Strong

The panel assigned a rating of *strong evidence* to this recommendation based on five randomized controlled trials that met WWC standards. (See Table D.2 for a list of the studies and details regarding the intervention, sample, outcomes, and impacts.) All five studies reported positive impacts, either statistically significant or substantively important, on content-area acquisition measures developed by the researchers.

Most of the studies were conducted at the intermediate and middle school level; however, one study involved students in the primary grades, pre-K–2, with the majority of the student sample in grades K–2.[176] Although students in Grades 3, 4, and 8 were not included in any of the five studies used to support this recommendation, the panel believes results from the five studies apply to students in Grades K–8. Studies were conducted in classrooms that contained both English learners and native English speakers. Four of the five studies calculated impacts for the English learner subsample,[177] while the fifth study calculated impacts on the entire student sample (English learners and native English speakers),[178] with English learners constituting over 60% of the sample.

All of the instructional interventions in the set of five studies provided students with opportunities to develop written and/or oral academic English within the context of science or social studies instruction. In two studies, the effectiveness of an intervention focused on teaching students content area material and vocabulary was compared to business-as-usual instruction.[179] The interventions in these two studies utilized *all* the practices recommended by the panel. Both these studies found positive, statistically significant impacts on content-acquisition measures.

In two other studies, instruction focused on teaching science concepts to fifth-grade students using language that was accessible to students.[180] Both of these studies investigated whether teaching complex scientific concepts such as photosynthesis and respiration was more effective if the concepts were explained first in simple, everyday language before discussing them in more technical scientific terms rather than if concepts were taught with everyday and scientific language simultaneously. On content-area measures, one study found an effect that was statistically significant and substantive,[181] while another study found a marginally significant but substantively important effect.[182]

The fifth study examined the impact of using videos to teach science vocabulary on primary-grade students' acquisition of content-area material.[183] The authors compared teaching vocabulary using videos with teaching vocabulary without videos and found substantive effects on a science concept knowledge measure when videos were used.

Overall, all five studies demonstrated consistently positive impacts. Four of the studies found statistically or marginally significant impacts, with three of those four findings being substantively important.[184] The fifth study, on primary-grade science instruction, did not result in statistically significant findings; however, the impact was substantively important.[185] In addition, there were no discernible effects or statistically significant

176. Silverman and Hines (2009).
177. August et al. (2009); Ryoo (2009); Silverman and Hines (2009); Vaughn et al. (2009).
178. Brown et al. (2010).
179. August et al. (2009); Vaughn et al. (2009).
180. Brown et al. (2010); Ryoo (2009).
181. Brown et al. (2010).
182. Ryoo (2009).
183. Silverman and Hines (2009).
184. August et al. (2009); Brown et al. (2010); Ryoo (2009); Vaughn et al. (2009).
185. Silverman and Hines (2009).

negative effects. This pattern of findings, in combination with the panel's high degree of confidence in the effectiveness of the practices described in this recommendation, resulted in the panels' determination of *strong evidence* to support this recommendation.

Evidence Supporting Specific Instructional Practices

Each of the five studies included in this evidence base features multi-faceted interventions that incorporate a variety of instructional features. Many of these instructional features are aligned with the practices suggested in this recommendation and supported by the consistently positive results among the studies. The specific instructional features are presented below along with the supporting studies.

Instructional tools to anchor instruction and help students make sense of content. In four studies, instructional tools were used in both science and social studies classrooms to assist students in learning important concepts and facilitate their understanding of the content.[186] Instructional tools such as short videos,[187] visual representations of vocabulary and concepts,[188] and graphic organizers[189] were used in content-area classes to support English learners. In addition, in one study, one or two questions were given to the students prior to viewing the videos to help them stay focused.[190]

Explicit instruction in general and content-specific academic vocabulary. In one study, students were explicitly taught both general academic vocabulary (e.g., *structure*, *development*, *function*) and content-specific academic vocabulary (e.g., *organism*, *cell*) as part of an intervention focused on teaching science content.[191] Further support for this practice was provided by four additional studies that included general or content-specific vocabulary instruction.[192]

Opportunities for students to talk about content. Two of the studies promoted oral language development through student discussions of content ideas with a partner.[193] In both these studies, students with stronger English skills served as models for less language-proficient students, thus supporting the panel's recommendation of this practice. One additional study included content-based problem-solving activities that fostered oral discussions among small heterogeneous groups of students.[194]

Writing opportunities to extend learning of content material. Structured writing activities were part of the interventions in four studies.[195] In two studies, students provided written explanations of the newly learned science concepts.[196] Two additional studies used graphic organizers or other brief writing activities to provide students with opportunities to make connections among the concepts and strengthen their understanding of the content.[197]

186. August et al. (2009); Ryoo (2009); Silverman and Hines (2009); Vaughn et al. (2009).
187. August et al. (2009); Ryoo (2009); Silverman and Hines (2009); Vaughn et al. (2009).
188. August et al. (2009); Ryoo (2009).
189. August et al. (2009); Vaughn et al. (2009).
190. Vaughn et al. (2009).
191. August et al. (2009).
192. Brown et al. (2010); Ryoo (2009); Silverman and Hines (2009); Vaughn et al. (2009).
193. August et al. (2009); Vaughn et al. (2009).
194. Ryoo (2009).
195. August et al. (2009); Brown et al. (2010); Ryoo (2009); Vaughn et al. (2009).
196. Brown et al. (2010); Ryoo (2009).
197. August et al. (2009); Vaughn et al. (2009).

Table D.2. Studies providing evidence for Recommendation 2 (content-area teaching)

Study	Comparison	Duration	Student Sample	Outcome		
				Domain	Individual Measures (Effect Size and Significance Level)	Domain Effect Size
Science						
August, Branum-Martin, Cardenas-Hagan, and Francis (2009) RCT	Intervention focused on science knowledge and academic vocabulary (Quality English and Science Teaching-QuEST) vs. business-as-usual condition.	Approximate total time: 30 hours Five 40-minute lessons/ week for 9 weeks	562 EL in Grade 6	Content-area acquisition	Researcher-developed ▪ Science Knowledge (ES = 0.16*)	0.16*
Brown, Ryoo, and Rodriguez (2010)[a] RCT	Science concepts taught in everyday English prior to introducing scientific language vs. science concepts taught in both everyday and scientific language simultaneously. (Instruction in both conditions was computer-based)	Approximate total time: 3-4 hours	49 students in Grade 5 61% of sample were EL (30 out of 49 total students)	Content-area acquisition	Researcher-developed ▪ Photosynthesis Assessment (ES = 0.83*)	0.83*
Ryoo (2009)[a] RCT	Science concepts taught in everyday English prior to introducing scientific language vs. science concepts taught in both everyday and scientific language simultaneously. (Instruction in both conditions was computer-based)	Approximate total time: 6 hours	68 EL in Grade 5	Content-area acquisition	Researcher-developed ▪ Photosynthesis and Respiration Multiple Choice Test (ES = 0.76 *ns*)[b] ▪ Photosynthesis and Respiration Open-Ended Questions (ES = 0.70 *ns*)[c]	0.73~

Table D.2. Studies providing evidence for Recommendation 2 (content-area teaching) *(continued)*

Study	Comparison	Duration	Student Sample	Outcome		
				Domain	Individual Measures (Effect Size and Significance Level)	Domain Effect Size
Silverman and Hines (2009)[a] RCT	Multimedia (videos) enhanced science vocabulary instruction vs. non-multimedia science vocabulary instruction.	Approximate total time: 27 hours Three 45-minute lessons/ week for 12 weeks	27 EL in Grades pre-K–2	Content-area acquisition	Researcher-developed Science Concepts Knowledge (ES = 0.34 *ns*)	0.34 *ns*
Social Studies						
Vaughn et al. (2009)[a] RCT	Intervention focused on vocabulary and comprehension in social studies vs. business-as-usual condition.	Approximate total time: 37.5-50 hours Five 50-minute lessons/ week for 9-12 weeks	Study 1: 92 EL in Grade 7	Content-area acquisition	Researcher-developed ▪ Social Studies Comprehension ▪ (ES = 0.71*)	
			Study 2: 106 EL in Grade 7	Content-area acquisition	Researcher-developed ▪ Social Studies Comprehension ▪ (ES = 0.69*)	

Note. RCT = randomized controlled trial; EL = English learner.

[a] WWC calculated the statistical significance.

[b] A correction for multiple comparisons was needed and resulted in a WWC-computed critical *p*-value of 0.025 for the Photosynthesis and Respiration Multiple Choice Test. The WWC calculated *p*-value was .05; therefore, the WWC does not find the individual results to be statistically significant.

[c] A correction for multiple comparisons was needed and resulted in a WWC-computed critical *p*-value of 0.05 for the Photosynthesis and Respiration Open-Ended Questions. The WWC calculated *p*-value was .07; therefore, the WWC does not find the individual results to be statistically significant.

* = $p < 0.05$. ~ = $p < 0.10$. *ns* = not statistically significant. When appropriate, the statistical significance values have been corrected for clustering, to account for mismatch between the unit of assignment and unit of analysis, and for multiple comparisons. Effect sizes of 0.25 or greater are considered to be substantively important regardless of statistical significance according to WWC Standards v. 2.1.

Recommendation 3: Provide Regular, Structured Opportunities to Develop Written Language Skills

Level of Evidence: Minimal

The panel assigned a *minimal evidence* rating for this recommendation as only two studies that met WWC standards contribute to the evidence base.[198] (See Table D.3 for a list of the studies and details regarding the intervention, sample, outcomes, and impacts.) One of the studies resulted in positive effects; the other resulted in no discernible effect.

One study focused on improving writing instruction through professional development, while the other study included a writing component in a larger study of the impact of an academic vocabulary intervention. The first study assessed the impact of a professional development intervention in text-based analytical writing on a large sample of middle and high school English learners (grades 6–12).[199] Positive effects were noted on two writing outcomes: a statistically significant effect on a standardized measure, and a statistically significant and substantive effect on a researcher-developed measure.[200] In the second study, instruction in writing was only one aspect of an intervention focused on teaching academic vocabulary to middle school students.[201] The evidence from this study is only tangentially related to the recommendation because writing is one of many components in the intervention and the major goal was not writing but rather academic vocabulary acquisition. The findings from this study were non-discernible on a standardized writing measure.

Thus, given the inconsistent pattern of findings resulting from this very limited number of studies, the panel has assigned a *minimal evidence* rating for this recommendation. Despite the limited evidence, the panel still believes that providing opportunities for students to develop their written language skills is critical. Therefore, this recommendation is largely based on the panel's expert opinion.

Evidence Supporting Specific Instructional Practices

The practices suggested in this recommendation appear in the two studies in the evidence base. In the section below, specific instructional components that are aligned with the practices suggested in this recommendation are delineated.

Writing assignments anchored in content and focused on developing both writing and language skills. Both studies included written assignments anchored in content.[202] In one study, writing lessons were anchored to a piece of informational text that students had been working with throughout the week,[203] while the second study tied writing strategies and activities to complex literary texts.[204]

In both studies instructional routines and support were provided to develop students' writing and language skills. In both studies, instruction was structured and explicit to support students as they moved through the various stages of writing: from their notes to the written composition.[205] In addition, one study reviewed the academic vocabulary that was to be used in the essays.[206] In the other study, instruction also focused on the conventions of academic English.[207]

198. **Kim et al. (2011); Lesaux et al. (in press).**
199. **Kim et al. (2011).**
200. While the sample included both middle and high school students, 56% of the sample was from grades 6-8.
201. **Lesaux et al. (in press).**
202. **Kim et al. (2011); Lesaux et al. (in press).**
203. **Lesaux et al. (in press).**
204. **Kim et al. (2011).**
205. **Kim et al. (2011); Lesaux et al. (in press).**
206. **Lesaux et al. (in press).**
207. **Kim et al. (2011).**

Language-based supports to facilitate students' writing. In both studies, language-based tools were used to support students as they work on their writing assignments.[208] Both studies used tools, such as graphic organizers, to support organization of ideas. One study also used a number of other tools, including sentence starters for summarizing and analyzing the material for the writing activity.[209]

Use of small groups or pairs. The two studies included in the evidence base used collaborative groups to provide students with the opportunity to work and talk together on various aspects of writing. In one study, students worked with a peer to talk through and organize their ideas before writing.[210] The other study used collaborative groups to facilitate guided student practice.[211]

Assessment of students' writing. In one of the studies, student writing was periodically assessed to identify students' strengths and areas for growth.[212] Teachers used the assessment information to provide specific corrective feedback to the students and to tailor classroom writing instruction and writing activities.

208. Kim et al. (2011); Lesaux et al. (in press).
209. Kim et al. (2011).
210. Lesaux et al. (in press).
211. Kim et al. (2011).
212. Kim et al. (2011).

Table D.3. Studies providing evidence for Recommendation 3 (written language skills)

Study	Comparison	Duration	Student Sample	Outcome		
				Domain	Individual Measures (Effect Size and significance level)	Domain Effect Size
Kim et al. (2011)[a] RCT	Professional development on teaching text-based analytical writing (Pathway Project) vs. business-as-usual condition.	Approximate total time: 46 hours of training Six 6-hour sessions + five 2-hour afterschool sessions across the school year	2721 EL in Grades 6-12 56% of the students were in Grades 6-8	Reading	Standardized CST: Reading subtest (ES = 0.05 *ns*)	0.05 *ns*
				Writing	Standardized CST: Writing subtest (ES = 0.09*) Researcher-developed ALA[b] (ES = 0.35*)	0.22*
Lesaux, Kieffer, Kelley, and Harris (in press) [a, c, d] RCT	Intervention focused on academic vocabulary (Academic Language Instruction for All Students-ALIAS) vs. business-as-usual condition.	Approximate total time: 75 hours Five 45-minutes lessons/week for 20 weeks Approximately 11% of the intervention time was spent on writing	519 EL in Grade 6[e]	Writing	Standardized Oral and Written Language Scales: Written Expression (ES = 0.17 *ns*)	0.17 *ns*

Note. RCT = randomized controlled trial; EL = English learner; ALA = Assessment of Literary Analysis; CST = California Standards Test.

[a] The WWC obtained the information to calculate an effect size through correspondence with the authors.

[b] A random sample of students was selected to complete the Assessment of Literary Analysis (ALA) measure, resulting in a total of 50 teachers (684 students) in the Pathway Project condition and 51 teachers (709 students) in the comparison condition analysis sample.

[c] WWC calculated the statistical significance.

[d] The effect sizes and statistical significance reported here do not include the imputed student data reported in the study.

[e] For the writing measure, 519 EL students were randomly selected from 1365 total EL students.

* = $p < 0.05$. *ns* = not statistically significant. When appropriate, the statistical significance values have been corrected for clustering, to account for mismatch between the unit of assignment and unit of analysis, and for multiple comparisons. Effect sizes of 0.25 or greater are considered to be substantively important regardless of statistical significance according to WWC Standards v. 2.1.

Recommendation 4: Provide Small-Group Instructional Intervention to Students Struggling in Areas of Literacy and English Language Development.

Level of Evidence: Moderate

The panel assigned a rating of *moderate evidence* to this recommendation based on six randomized controlled trials that met WWC standards. (See Table D.4 for a list of the studies and details regarding the intervention, sample, outcomes, and impacts.) Overall, across the six studies, the results were inconsistent as both positive (either statistically significant or substantively important) and non-discernible effects were found.[213]

Five of the six studies focused on the primary grades (K–2);[214] the sixth study was conducted with older students from grades 6–8.[215] Although students in Grades 3, 4, and 5 were not included in any of the six studies used to support this recommendation, the panel believes results from the six studies apply to students in Grades K–8. Across these six studies, the results were reported either for the English learner sample or subsample,[216] or for the entire sample of students (English learners and native English speakers),[217] with English learners constituting over 50% of the sample. All of the studies that provide support for this recommendation were conducted with students who were at risk for reading difficulties.

All six of these studies assessed the impact of small-group interventions focused on various aspects of literacy and language. Four studies resulted in statistically significant and/or substantive impacts.[218] However, in three of these four studies, these effects were not maintained across all the outcome domains in which impacts were assessed.[219] For example, in one study conducted in kindergarten classes, a statistically significant and substantive impact was found in the domain of English language development but not in the domain of reading.[220] Note that the small-group intervention in this study focused on building listening comprehension and vocabulary skills. Similar findings were obtained in another study that included a small-group intervention in vocabulary for kindergartners.[221] In this second study, substantive impacts were found in vocabulary domain but not in reading. In the third study,[222] which included a comprehensive reading intervention, a similar pattern of findings was also evident (i.e., a substantive impact in the reading domain but not in the English language domain). In a fourth study that included a literacy intervention, inconsistent impacts were noted across grade levels.[223] There were substantive impacts for students in pre-K and marginally significant substantive impacts for students in kindergarten; however, impacts in first and second grade were non-discernible.

Two additional studies resulted in non-discernible effects across all the outcome domains in which impacts were assessed (reading, vocabulary, and English language development) in those studies.[224] Both these studies included small-group interventions that provided instruction on a broad range of reading skills (phonics, vocabulary, comprehension).

213. Burns (2011); Denton et al. (2008); Nelson et al. (2011); Ransford-Kaldon et al. (2010); Solari and Gerber (2008); Vaughn et al. (2006).
214. Burns (2011); Nelson et al. (2011); Ransford-Kaldon et al. (2010); Solari and Gerber (2008); Vaughn et al. (2006).
215. Denton et al. (2008).
216. Burns (2011); Nelson et al. (2011); Ransford-Kaldon et al. (2010); Solari and Gerber (2008); Vaughn et al. (2006).
217. Denton et al. (2008).
218. Nelson et al. (2011); Ransford-Kaldon et al. (2010); Solari and Gerber (2008); Vaughn et al. (2006).
219. Nelson et al. (2011); Solari and Gerber (2008); Vaughn et al. (2006).
220. Solari and Gerber (2008).
221. Nelson et al. (2011).
222. Vaughn et al. (2006).
223. Ransford-Kaldon et al. (2010).
224. Burns (2011); Denton et al. (2008).

Overall, five of the 14 domain effect sizes were positive (either statistically significant or substantively important) and nine were nondiscernible. Given these inconsistent findings, the panel decided on a *moderate evidence* rating for the recommendation.

Evidence Supporting Specific Instructional Practices

In the section below, the intervention features that have informed the suggestions made by the panel are delineated. All the practices suggested by the panel in this recommendation, with the exception of one, are aligned with the instructional features detailed in the studies.

Assessment information to identify students. All six studies included in the evidence base provide support for this practice.[225] While the specific measures and screening criteria varied across the studies, each study utilized student assessment data to identify students with potential problems in language and literacy development.

Designing instruction to target students' identified needs. None of the studies address this particular aspect in their interventions. In each study, the same small-group intervention was provided to all participating students. However, the panel believes that in order to meet the needs of students, it is important to either provide differentiated instruction in a whole-class setting or provide tailored small-group instructional interventions.

Small groups consisting of three to five students. Across the six studies, instruction was provided to students in small groups that ranged in size from two students per group to a maximum of seven students per group.[226] In five of the studies, instruction was provided to students in small groups consisting of two to five students.[227]

Addressing basic foundational reading skills as well as literacy and language skills. All six studies examined interventions that addressed foundational reading skills (e.g., decoding, fluency) along with complex literacy or language skills (e.g., vocabulary, reading comprehension, listening comprehension). However, the interventions varied in the type of literacy and language skills covered, and in the amount of time devoted to teaching these skills. For example, in one study, vocabulary was the main focus, but decoding and fluency were also addressed.[228] In another study, more time was spent on teaching listening comprehension and vocabulary than on phonemic awareness and alphabetic knowledge.[229] Still, in another study, while several areas of reading were covered, there was heavy emphasis on oracy and vocabulary development.[230]

Scaffolding instruction. Instruction was scaffolded in many ways to support English learners in all six studies. In all six studies, students were taught using explicit, systematic instruction.[231] For example, in one study, students were taught vocabulary explicitly by providing student-friendly definitions, visuals, and examples that showed how to use the words in sentences.[232] Complex instructional

225. Burns (2011); Denton et al. (2008); Nelson et al. (2011); Ransford-Kaldon et al. (2010); Solari and Gerber (2008); Vaughn et al. (2006).
226. Burns (2011); Denton et al. (2008); Nelson et al. (2011); Ransford-Kaldon et al. (2010); Solari and Gerber (2008); Vaughn et al. (2006).
227. Denton et al. (2008); Nelson et al. (2011); Ransford-Kaldon et al. (2010); Solari and Gerber (2008); Vaughn et al. (2006).
228. Nelson et al. (2011).
229. Solari and Gerber (2008).
230. Vaughn et al. (2006).
231. Burns (2011); Denton et al. (2008); Nelson et al. (2011); Ransford-Kaldon et al. (2010); Solari and Gerber (2008); Vaughn et al. (2006).
232. Nelson et al. (2011).

tasks were also broken down into small manageable steps in three of the six studies.[233] For example, in one study, while working on listening comprehension skills, students recalled and summarized before engaging in predicting or inferencing activities.[234] In five studies, ample attention was also given to practicing newly learned skills and reviewing previously taught skills.[235] For instance, in one study that focused on vocabulary instruction, students were given multiple practice opportunities, such as matching word meanings, completing the sentence by filling in the blanks, and using the word in a sentence.[236] Additionally, corrective feedback was also provided to correct for errors in four studies.[237]

233. Burns (2011); Solari and Gerber (2008); Vaughn et al. (2006).
234. Solari and Gerber (2008).
235. Burns (2011); Denton et al. (2008); Nelson et al. (2011); Solari and Gerber (2008); Vaughn et al. (2006).
236. Nelson et al. (2011).
237. Burns (2011); Nelson et al. (2011); Solari and Gerber (2008); Vaughn et al. (2006).

Table D.4. Studies providing evidence for Recommendation 4 (small-group instructional intervention)

Study	Comparison	Duration	Student Sample	Outcome		
				Domain	Individual Measures (Effect Size and Significance Level)	Domain Effect Size
Burns (2011)[a] RCT	Small-group instruction in reading (Systematic and Explicit Teaching Routines) vs. business-as-usual control.	Approximate total time: 30 hours Five 30-minute lessons/ week for 12 weeks	78 EL in Grade 1	Reading	<u>Standardized</u> ▪ DIBELS Nonsense Word Fluency ▪ (ES = 0.00 *ns*) ▪ DIBELS Oral Reading Fluency ▪ (ES = -0.11 *ns*) ▪ SAT-10 Word Reading (ES = -0.07 *ns*) ▪ SAT-10 Sentence Reading (ES = -0.42 *ns*)[b] ▪ SAT-10 Comprehension (ES = 0.02 *ns*)	-0.12 *ns*
				Vocabulary	<u>Researcher-developed</u> ▪ Depth of Knowledge—Vocabulary ▪ (ES = 0.20 *ns*) ▪ Standardized ▪ GRADE Word Meaning (ES = -0.13 *ns*)	0.03 *ns*
				English language development	<u>Standardized</u> ▪ GRADE Listening Comprehension ▪ (ES = 0.02 *ns*)	0.02 *ns*
Denton, Wexler, Vaughn, and Bryan (2008)[a] RCT	Small-group instruction in reading vs. business-as-usual control.	Approximate total time: 43 hours Five 40-minute lessons/ week, for 13 weeks	38 students in Grades 6-8 Over 50% of the sample was EL	Reading	<u>Standardized</u> ▪ WJ III: Letter-Word Identification subtest and the Word Attack subtest--Cluster score (ES = 0.33 *ns*) ▪ WJ III Passage Comprehension subtest ▪ (ES = 0.04 *ns*) ▪ TOWRE Sight Word Efficiency subtest ▪ (ES = -0.19 *ns*) ▪ DIBELS Oral Reading Fluency subtest ▪ (ES = 0.01 *ns*)	0.05 *ns*

Table D.4. Studies providing evidence for Recommendation 4 (small-group instructional intervention) *(continued)*

Study	Comparison	Duration	Student Sample	Outcome		
				Domain	Individual Measures (Effect Size and Significance Level)	Domain Effect Size
Nelson, Vadasy, and Sanders (2011)[a] RCT	Small group reading intervention focused on vocabulary (Early Vocabulary Connections) vs. control.	Approximate total time: 33 hours Five 20-minute lessons/ week, for 20 weeks	185 EL in Grade K	Vocabulary	<u>Researcher-developed</u> ▪ Proximal root word vocabulary ▪ (ES = 0.68*) ▪ Standardized ▪ WRMT-R/NU-word comprehension cluster (ES = 0.15 *ns*)	0.41 *ns*
				Reading	<u>Standardized</u> ▪ WRMT-R/NU-word ID and word attack subtest (ES = 0.19 *ns*)	0.19 *ns*

Table D.4. Studies providing evidence for Recommendation 4 (small-group instructional intervention) *(continued)*

Study	Comparison	Duration	Student Sample	Outcome		
				Domain	Individual Measures (Effect Size and Significance Level)	Domain Effect Size
Ransford-Kaldon et al. (2010)[a] RCT	Small-group instruction focused on literacy (Leveled Literacy Intervention System-LLI) vs. business-as-usual condition.	Approximate total time: Up to 45 hours Five 30-minute lessons/ week, for 18 weeks	23 EL in Grade K 13 EL in Grade 1 21 EL in Grade 2	Pre-reading: Grade K	Standardized ▪ DIBELS Initial Sound Fluency (ES = 0.51 *ns*) ▪ DIBELS Letter Naming Fluency ▪ (ES = 0.44 *ns*) ▪ DIBELS Phoneme Segmentation ▪ (ES = 0.84~)	0.60 *ns*
				Reading: Grade K	Standardized ▪ LLI benchmarks (ES = 0.91*) ▪ DIBELS Nonsense Word Fluency ▪ (ES = 0.74~)	0.82 ~
				Reading: Grade 1	Standardized ▪ LLI benchmarks (ES = 0.18, ns) ▪ DIBELS Nonsense Word Fluency ▪ (ES = -0.24, ns) ▪ DIBELS Oral Reading Fluency ▪ (ES = -0.62, ns)	-0.23 *ns*
				Reading: Grade 2	Standardized ▪ LLI benchmarks (ES = 0.35 *ns*) ▪ DIBELS Nonsense Word Fluency ▪ (ES = 0.08 *ns*) ▪ DIBELS Oral Reading Fluency ▪ (ES = -0.10 *ns*)	0.11 *ns*

Table D.4. Studies providing evidence for Recommendation 4 (small-group instructional intervention) *(continued)*

Study	Comparison	Duration	Student Sample	Outcome		
				Domain	Individual Measures (Effect Size and Significance Level)	Domain Effect Size
Solari and Gerber (2008)[a] RCT	Small-group instruction focused on listening comprehension and vocabulary vs. control.	Approximate total time: 8 hours Three 20-minute lessons/ week for 8 weeks	27 at-risk EL in Grade K	English language development	Researcher-developed ▪ Experimental LC (ES = 1.73*) ▪ Standardized ▪ WJ Story Recall (ES = 2.34*)	2.04*
				Reading	Standardized ▪ WJ Word ID (ES = -0.19 *ns*) ▪ WJ Word Attack (ES = 0.43 *ns*)	0.12 *ns*

Table D.4. Studies providing evidence for Recommendation 4 (small-group instructional intervention) *(continued)*

Study	Comparison	Duration	Student Sample	Outcome		
				Domain	Individual Measures (Effect Size and Significance Level)	Domain Effect Size
Vaughn et al. (2006)[a] RCT	Small-group instruction in reading (Proactive Reading) vs. business-as-usual control.	Approximate total time: 145 hours Five 50-minute lessons/week for approximately 35 weeks	91 EL in Grade 1	English language development	Standardized ▪ WLPB-R: Listening Comprehension ▪ (ES = 0.08 *ns*) ▪ WLPB-R: Picture Vocabulary (ES = 0.15 *ns*) ▪ WLPB-R: Verbal Analogies (ES = 0.11 *ns*) ▪ WLPB-R: Oral Language Composite ▪ (ES = 0.15 *ns*)	0.12 *ns*
				Reading	Standardized ▪ WLPB-R: Letter Word Identification ▪ (ES = 0.35 *ns*) ▪ WLPB-R: Word Attack (ES = 0.47 *ns*)[c] ▪ WLPB-R: Passage Comprehension ▪ (ES = 0.13 *ns*) ▪ Test of Word Reading Efficiency ▪ (ES = 0.86*) ▪ DIBELS-Oral Reading Subtest (Passage 1) (ES = 0.35 *ns*) ▪ DIBELS-Oral Reading Subtest (Passage 2) (ES = 0.30 *ns*)	0.41~

Note. RCT = randomized controlled trial; EL = English learner; DIBELS = Dynamic Indicators of Basic Early Literacy Skills; SAT-10 = Stanford Achievement Test, Tenth Edition; GRADE = Group Reading Assessment and Diagnostic Evaluation; WJ III = Woodcock–Johnson Tests of Achievement III; TOWRE = Test of Word Reading Efficiency Sight Word Efficiency; WRMT-R/NU = Woodcock Reading Mastery Test-Revised/Normative Update; LLI = Leveled Literacy Intervention; WLPB-R = Woodcock Language Proficiency Battery-Revised.

[a] WWC computed statistical significance.

[b] A correction for multiple comparisons was needed and resulted in a WWC-computed critical *p*-value of 0.01 for the SAT-10 Sentence Reading. The WWC calculated *p*-value was .07; therefore, the WWC does not find the individual results to be statistically significant.

Table D.4. Studies providing evidence for Recommendation 4 (small-group instructional intervention) *(continued)*

[c] A correction for multiple comparisons was needed and resulted in a WWC-computed critical *p*-value of 0.016 for the WLPB-R: Word Attack. The WWC calculated *p*-value was .04; therefore, the WWC does not find the individual results to be statistically significant.

* = $p < 0.05$. ~ = $p < 0.10$. *ns* = not statistically significant. When appropriate, the statistical significance values have been corrected for clustering, to account for mismatch between the unit of assignment and unit of analysis, and for multiple comparisons. Effect sizes of 0.25 or greater are considered to be substantively important regardless of statistical significance according to WWC Standards v. 2.1.

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