

How *Jamestown Reading Navigator*<sup>™</sup>  
Supports Research-Based Instruction  
for Struggling Adolescent Readers

# Support for Content-Area Literacy

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## About This Paper

This paper presents research-supported best practices related to instruction of struggling adolescent readers—that is, students in grades 6–12 who are reading at least two levels below grade level—and describes how *Jamestown Reading Navigator*™ supports those practices.

### What Is *Jamestown Reading Navigator*?

*Jamestown Reading Navigator* is a reading intervention program designed specifically for students in grades 6–12 who are reading two or more reading levels below their grade in school. The program provides direct, explicit instruction and modeling of good reading practices, together with opportunities for students to practice and apply these reading strategies.

*Jamestown Reading Navigator* combines online activities featuring interactive multimedia for students to complete; engaging and appropriate online and print texts for students to read; an audio component for further guided or independent study; student writing in response to reading; student recording of fluency passages; an assessment program to monitor students' progress; an independent measure of progress monitoring; and teacher support materials, including professional development, lesson plans, instructional recommendations, and reteaching skills support. Major areas of focus for *Jamestown Reading Navigator* include

- Comprehension skills and strategies, designed for application to content-area reading
- Vocabulary
- Writing
- Fluency
- Decoding/phonics (for students with a particular need in this area)

The *Jamestown Reading Navigator* Learner Management System helps teachers manage individual student learning and provides ongoing, up-to-the-minute information on how students are performing. Online professional development modules and on-site professional development sessions offered by Jamestown Education help educators—teachers, administrators, literacy specialists, and others—learn how to implement *Jamestown Reading Navigator* more effectively. These sessions also provide information and suggestions to help educators develop effective strategies for working with struggling adolescent readers.

*Jamestown Reading Navigator* has been developed based on the most up-to-date research and expert thinking in adolescent literacy, drawing on more than 30 years of experience in reaching adolescent readers with the popular Jamestown Education print series. This paper describes the match between *Jamestown Reading Navigator* and the best available instructional thinking in a variety of specific areas that are important to the success of struggling adolescent readers, as described below.

## Introduction

### A Critical Need to Support Struggling Adolescent Readers

Problems with literacy have serious and long-lasting consequences. A lack of literacy skills is “one of the most commonly cited reasons” for students to drop out of school (Biancarosa & Snow, 2006, p. 7). A resource guide on adolescent literacy prepared for the Southwest Educational Development Laboratory described the problem as follows:

For secondary-level students . . . the social and economic consequences of not reading well can be cumulative and profound: the failure to attain a high school diploma, a barrier to higher education, underemployment or unemployment, and difficulty in managing personal and family life. Years of failing at what is deemed a hallmark of intelligence and worth can also leave struggling readers with emotional consequences, such as anxiety and low self-esteem, that affect personality and interpersonal relationships. These effects within and beyond the classroom walls show that by the secondary grades educators can no longer defer solutions to future development or instruction. (Peterson et al., 2000, p. 6)<sup>1</sup>

<sup>1</sup> Peterson et al. (2000) is laid out in a paginated PDF format, but the format does not include page numbers. Page references for quotes from Peterson et al. (2000) that are given in this paper have therefore been calculated on the basis of page numbers shown in the document table of contents.

Numerous sources attest to the scope of the challenge. *Reading Next* cited both results from the National Assessment of Educational Progress (NAEP) and the opinions of experts in adolescent literacy that “as many as 70 percent of students struggle with reading in some manner” that requires instruction differentiated for their specific needs (Biancarosa & Snow, 2006, p. 8, citing Loomis & Bourque, 2001; NCES, 1999, 2006; Olson, 2006).

Adolescents struggle with literacy for a variety of reasons. For some, English may not be their first language. Others may have mild learning disabilities. In many cases, students may simply lack experience and skill with reading. Unfortunately, difficulties in reading don’t cure themselves, but instead tend to get worse as students get older—a phenomenon reading experts refer to as the “Matthew Effect” (Stanovich, 1986). These students need literacy instruction that addresses the specific challenges they face, using the best available research-based methods and principles, in order to improve their chances of succeeding both during school and afterward.

### The State of Research on Struggling Adolescent Readers

Over the last two decades, attempts to improve student literacy on the national level have focused largely on elementary instruction, and particularly on early literacy—that is, literacy at the primary grades. For example, the focus of the Reading First initiative was on improving literacy at the primary levels. Recently, however, a number of efforts—including research summaries for a variety of sources, publication of the *Reading Next* report and other documents from the Alliance for Excellent Education, and position statements from organizations such as the National Reading Conference and the International Reading Association—have helped create a higher profile for instructional issues related to adolescent readers, and particularly the large proportion of adolescents who struggle with reading.

Initiatives such as the No Child Left Behind Act have raised expectations for instruction. Instruction is expected to be backed with solid research that concludes it is likely to result in the desired impact on student learning. Unfortunately, research on what constitutes effective literacy instruction for adolescents is still limited. According to the editors of a volume intended to “compile from the best researchers in the field a summary and synthesis of adolescent literacy research and practice,”

As of 2003, there is not a body of research to tell us appropriate interventions that will help struggling middle and secondary school readers who can barely read. As of 2003, we still do not have a body of research to provide us with appropriate interventions to help high school readers who can read fluently but remain 3 or 4 years below grade level in reading. (Jetton & Dole, 2004, p. 6)

Although research on what constitutes effective literacy instruction for adolescents is limited in significant ways, there is substantial support in research and expert opinion for a variety of specific instructional recommendations. The state of knowledge with regard to effective instruction for struggling adolescent readers fits the description of *best available evidence* as characterized by U.S. Department of Education Assistant Secretary Grover J. Whitehurst: that is, “the integration of professional wisdom with the best available empirical evidence in making decisions about how to deliver instruction” (Whitehurst, 2002).

### The Reading Next Report

A critical milestone in recent efforts to highlight the challenges related to adolescent literacy was the publication of *Reading Next*, a report to Carnegie Corporation of New York focusing on the needs of adolescent readers (defined in the report as those in grades 4–12), with a special emphasis on the needs of struggling readers. Preparation of this report included the following steps.

- A panel of five nationally known and respected educational researchers was convened in spring 2004, together with representatives of Carnegie Corporation of New York and the Alliance for Excellent Education.
- These panelists drew up a set of recommendations for how to meet the needs of struggling readers, including 15 specific elements of effective adolescent literacy programs that had “a substantial base in research and/or professional opinion” (Biancarosa & Snow, 2006, p. 12). These included both elements with an instructional focus and recommended infrastructure elements to improve adolescent literacy.

- The resulting paper was reviewed and augmented at the 2004 meeting of the Adolescent Literacy Funders Forum (ALFF).
- An Appendix was compiled of literature supporting each of the report’s main recommendations.
- In 2006, a second edition of the report was published.

The *Reading Next* recommendations thus represented a synthesis of research-informed expert opinion that serves as an important touchstone for much of what is known about effective adolescent literacy instruction. Several caveats, however, are in order with regard to using the recommendations as a yardstick for measuring instructional programs in general, and *Jamestown Reading Navigator* in particular.

- While all 15 elements identified by *Reading Next* are characterized as having “a substantial base in research and/or professional opinion” (Biancarosa & Snow, 2006, p. 12), the report nonetheless cautions that “the optimal mix of these factors has yet to be determined. . . . Nor does the remediation of adolescent literacy difficulties involve indiscriminately layering on all fifteen key elements. Choices should be matched to school and student needs” (Biancarosa & Snow, 2006, p. 29). The expectation is not that each literacy program should necessarily include all 15 elements, but that developers and adopters of such programs should select those elements that seem best matched to their specific circumstances.
- The focus of *Reading Next* is explicitly on “the large population of struggling students who already decode accurately but still struggle with reading and writing after third grade” (Biancarosa & Snow, 2006, p. 11). The report thus does not include recommendations related to areas such as decoding and fluency that may be important for readers who are struggling at a more basic level.
- Several of the elements of *Reading Next* relate to how infrastructure impacts adolescent literacy learning. The most that any purchased instructional program can do in these areas is to provide support to schools and districts as they implement these elements.

#### Development of This Paper

Development of this research-based white paper included the following steps.

- A top-level review of *Reading Next* was conducted to identify claims and recommended practices, including both those that are associated with the 15 key elements of adolescent literacy identified in the report and those that appear elsewhere in the report. As part of this review, information was collected about the sources in the Appendix to *Reading Next*, which listed literature supporting each of the 15 key elements.
- Well-known experts in the field of adolescent literacy were consulted to identify key, current, and reputable sources related to instruction for struggling adolescent readers. These included both experts who had been consulted during the development of *Jamestown Reading Navigator* and an independent expert not previously associated with the program.<sup>2</sup>
- Key documents were identified for review, with priority given to two types of documents:
  - *Broad policy-oriented research reviews and surveys of expert opinion, developed by reputable institutions and authors, with a goal of identifying key elements in effective adolescent literacy programs*
  - *More focused research syntheses and meta-analyses from reputable sources, describing the state of research and/or theory related to a specific relevant topic in adolescent literacy (e.g., comprehension, writing, formative assessment)*

<sup>2</sup> Key contributors included Dr. Thomas W. Bean, professor in literacy/reading and coordinator of doctoral studies in the Department of Curriculum and Instruction, University of Nevada at Las Vegas; Dr. William G. Brozo, professor of literacy, Graduate School of Education, George Mason University; and Dr. Douglas Fisher, professor of language and literacy education, San Diego State University. Drs. Brozo and Fisher had previously consulted with the development team for *Jamestown Reading Navigator*. These experts provided input into interpretation of the research literature, as well as recommendations of sources to review, but are not responsible for writing the summaries of the literature or for developing the correlations of the instructional recommendations to *Jamestown Reading Navigator*.

In addition to these two types of documents, some specific research reports were also identified for review, in the case of studies that were particularly germane to topics under investigation.

- Sources were reviewed and summarized, with special reference to
  - *Specific instructional recommendations*
  - *The nature of the evidence supporting each recommendation*
- Instructional recommendations were consolidated from multiple sources.
- Cross-comparison of the research-based recommendations and *Jamestown Reading Navigator* verified that *Jamestown Reading Navigator* supports each research-based recommendation listed in this paper.

In the final paper as presented here, each section spells out specific instructional recommendations that are supported by a mix of research and expert opinion. A table then provides information on how *Jamestown Reading Navigator* aligns with each recommendation.

Key policy-oriented documents and research syntheses that were reviewed for this paper are listed in the References section of the complete White Paper.

## SUPPORT FOR CONTENT-AREA LITERACY

“[S]truggling readers may have learned [comprehension] strategies but have difficulty using them because they have only practiced using them with a limited range of texts and in a limited range of circumstances. Specifically, they may not be able to generalize their strategies to content-area literacy tasks and lack instruction in and knowledge of strategies specific to particular subject areas, such as math, science, or history.”—*Reading Next* (Biancarosa & Snow, 2006, pp. 8–9)

“The expectation that effective literacy instruction should address the demands that various subject area classes place on adolescents is fueled by the perceived need to develop students’ abilities to comprehend and think critically about multiple forms of text related to the school curriculum.”—*Effective Literacy Instruction for Adolescents*, published by the National Reading Conference (Alvermann, 2001, p. 9)

### The Importance of Content-Area Literacy

Content-area texts represent one of the major ways that students in middle school and high school learn across the subject areas. Unfortunately, students often lack the skills they need in order to properly understand those texts (see, for example, research on students’ difficulty reading textbooks cited by Allington, 2006, pp. 60–61). As Underwood and Pearson (2004) argued, “[T]he unfortunate fact is that the majority of adolescent readers in our schools routinely struggle when it comes to comprehending what they read as part of their academic assignments” (p. 135). Students’ inability to effectively process texts thus becomes a barrier not only to reading per se, but also to acquisition of knowledge across the content areas.

The importance of improving literacy across the content areas is universally acknowledged. For example:

- From the National Reading Conference: “Adolescents respond to the literacy demands of their subject area classes when they have appropriate background knowledge and strategies for reading a variety of texts. Effective instruction develops students’ abilities to comprehend, discuss, study, and write about multiple forms of text (print, visual, and oral)” (Alvermann, 2001, p. 2).
- From the Alliance for Excellent Education report *Adolescents and Literacy: Reading for the 21st Century*: “The most recent National Assessment of Educational Progress (NAEP, 2002) shows that many eighth- and twelfth-grade students do not have the capacity to perform the higher-order cognitive work required for deep learning of content through reading” (Kamil, 2003, p. 12).

- From the International Reading Association Commission on Adolescent Literacy: “Adolescents deserve instruction that builds both the skill and desire to read increasingly complex materials. . . . The [commission] recommends that content-area teachers and reading specialists work together to effectively support adolescents’ development of advanced reading strategies” (Moore et al., 1999, pp. 5-6; emphasis not retained from original).
- From the National Association of State Boards of Education Study Group on Middle and High School Literacy: “Simply put, literacy is the linchpin of standards-based reform. As literacy skills improve, student achievement rises not only in reading and writing but across the curriculum spectrum. . . . Thus, a key finding of the Study Group is that *state plans must target improving literacy skills by teaching them within the context of core academic subjects, rather than apart from challenging content instruction*” (NASBE, 2006, p. 5; emphasis in original).
- From Fisher and Ivey’s (2006) recommendations for evaluating interventions for struggling adolescent readers: A “nonnegotiable” assumption about any school launching such an intervention is that “the entire school is focused on literacy achievement and that teachers use content literacy approaches to ensure that their students are engaged in meaningful curriculum. By this, we mean that the history, science, math, English, art, music, and other teachers ensure that students are developing strategic reading skills as they read for information” (p. 181, citing Fisher & Frey, 2004; Ivey, 2004).
- From a report on adolescent English language learners’ acquisition of language and academic literacy: “[English language learners] benefit from the integration of explicit instruction in reading, writing, listening, and speaking across the curriculum, regardless of student proficiency level” (Short & Fitzsimmons, 2007, p. 34, citing Genesee et al., 2006).

The *Reading Next* report recognized the importance of this connection between reading skills and content-area learning. The second element of effective adolescent literacy instruction identified by *Reading Next* was “*Effective instructional principles embedded in content*,” which it defined as incorporating two dimensions: “language arts teachers using content-area texts” and “content-area teachers providing instruction and practice in reading and writing skills specific to their subject area” (Biancarosa & Snow, 2006, p. 4; emphasis in original). The focus of this element as described by *Reading Next* includes both dimensions. However, because *Jamestown Reading Navigator* is specifically a reading intervention program, its focus in this area is—by necessity—primarily on what can be done within a reading and literacy instruction context to help support content-area learning. Professional development directed toward content-area teachers is also available from Jamestown Education (as described later in this section).

### Content-Area Literacy and Reading Comprehension

Content-area literacy can be defined as “the level of reading and writing skill necessary to read, comprehend, and react to appropriate instructional materials in a given subject-area” (Readence et al., 2004, p. 4). As such, it has a close and obvious relationship to general reading comprehension, which can be defined simply as the set of skills and processes readers apply in order to understand the meaning of a text. However, there are a few important differences between the two:

- The goal of content-area literacy is knowledge in a specific content area, not comprehension of texts for their own sake.
- Content-area literacy focuses on nonfiction expository texts that communicate content-area information to students.
- Content-area literacy includes specific practices and conventions related to the individual content area and how language is used in that area.
- The ultimate test of effective content-area literacy instruction is students’ ability to apply the requisite skills in the content-area classroom. Accordingly, experts recommend that subject-area teachers be involved in this instruction.

While researchers caution that “learning from reading in content-area texts requires skills that are different than the skills needed to comprehend literature” (*Reading Next*, Biancarosa & Snow, 2006, p. 15), practically speaking there is a great deal of overlap between general literacy instruction—particularly reading comprehension instruction—and content-area literacy. As a result, this section on content-area literacy presents many instructional recommendations that are similar to those in other sections of this paper, particularly the Comprehension section. However, the discussion here is intended to highlight selected strategies

that have been particularly recommended for improving content-area literacy and describe how they are implemented in *Jamestown Reading Navigator*, with a particular eye to their content-area connection and how skills can be transferred to students' reading and writing in their subject-area classes.

### Text-Specific Strategies v. Transferable Strategies

In describing measures that can be taken to help support students' content-area literacy, a distinction must be drawn between strategies that are text specific—that is, that are designed to help students understand and process information from a specific text more effectively—and transferable strategies that students can apply to future texts.

Because the main focus of *Jamestown Reading Navigator* is not instruction in specific academic content, use of text-specific strategies has limited value within the program. For example, creating a study guide for students about a specific text might be valuable as a way to help students understand important information in a content-area textbook. However, since students do not create the study guide themselves, use of this strategy with a *Jamestown Reading Navigator* text selection is unlikely to result in a transferable skill students can use with future texts. On the other hand, having students complete graphic organizers with text selections can expose students to a variety of graphic organizer structures over time and provide them with experience in how to use these structures to help understand texts similar to those they will encounter in content-area classes. As a result, students may become more aware of graphic organizers as a text comprehension strategy and better prepared to use them on their own with other content-area texts. In keeping with this focus, the emphasis of this white paper section on content-area literacy is primarily on strategies that have a high likelihood of applying to student practice with content-area texts outside of *Jamestown Reading Navigator*.

### Instructional Recommendations

#### General Guidelines and Approaches

- **Comprehension strategy instruction with content-area texts.** A substantial body of research—including research reviewed in the National Reading Panel chapter on comprehension (NICHD, 2000)—supports the general impact of explicitly teaching comprehension strategies. As part of its description of “effective instructional principles embedded in content,” *Reading Next* endorsed wedding this kind of strategy instruction with use of content-area texts: “[T]he language arts teacher does not simply teach a technique (such as outlining) as an abstract skill, but teaches it using content-area materials” (Biancarosa & Snow, 2006, p. 14). The assumption is that by using these strategies with content-area texts, students will be better prepared to transfer their use of these strategies to content-area texts in the future, as prompted by content-area teachers or working on their own to understand a text.
- **Focus on skills useful for reading content-area texts.** According to *Reading Next*, language arts teachers should “include approaches and texts that will facilitate not only comprehension [of literature] but also learning from [content-area] texts” (p. 15). This suggests a broad guideline that instruction in reading skills should include skills and strategies that are likely to be specifically useful in abstracting meaning from expository content-area texts.
- **Guidance before, during, and after reading.** A top-level recommendation from Readence et al. (2004), in their book on research-based practices to develop content-area literacy, was to “Provide guidance in all aspects of the instructional lesson—before, during, and after reading” (p. 9; emphasis in original). They wrote, “Generally, students need to be prepared to read a text, need guidance in reading for selected ideas, and need reinforcement to retain the material learned” (p. 9).
  - *Before-reading activities should focus on activating prior knowledge and modeling how to interpret texts* (Readence et al., 2004, pp. 9–10).
  - *Guidance during reading should focus on helping students “[search] for information to satisfy the purposes set by the teacher and/or themselves”* (Readence et al., 2004, p. 10).
  - *“After reading, teachers check to see if present purposes have been attained” through activities such as “self-reports, introspection, and hindsights by students,” relating not only to the content students should have learned but also to the text comprehension processes they engaged in* (Readence et al., 2004, p. 10).

- **Modeling and feedback.** In connection with providing guidance to students before, during, and after reading, Readence et al. (2004) particularly advised, “Be aware that many students need you to explicitly model the content reading process at various stages. They need *feedback* on their attempts to comprehend and they need to have instructional guidance removed once they have a grasp of the material” (p. 98; emphasis in original).
  - *Teacher modeling was also specifically endorsed by Reading Next, the National Reading Panel, and Nokes and Dole (2004). In particular, Nokes and Dole cited recommendations by researchers that “teachers model the use of strategies as part of their explicit instruction,” “reveal[ing] to the students the invisible mental processes used by expert readers . . . by pausing and thinking aloud as they read” (p. 168).*
  - *Frequent, useful feedback to students is a basic principle of the research-recommended practice of formative assessment. Thus, for example, Black and Wiliam (1998a) cited a meta-analysis of 58 experiments that found that of the variables tracked, the quality of feedback had the largest impact on students’ performance (p. 36, citing Bangert-Drowns, Kulik, Kulik, & Morgan, 1991).*
- **Integrating reading, writing, and oral language.** Readence et al. (2004) recommended, “Use all language processes to help students learn with text” (p. 10; emphasis in original).
  - *According to the authors, “While reading will undoubtedly remain the major means of dealing with text, other language processes can play key roles in helping students learn content. . . . Research on writing (Tierney & Shanahan, 1991) has further pointed out the interconnections between reading and writing and has suggested that reading be viewed as a composing process. In effect, writing, listening, and speaking become additional tools to teach more content” (p. 10).*
  - *Alvermann (2001) also endorsed Tierney & Shanahan’s findings, stating, “Effective teachers look for ways to integrate reading and writing as often as possible because they know that each process reinforces the other and can lead to improved comprehension and retention of subject area content” (p. 11).*
  - *A meta-analysis conducted by the authors of the Writing Next report found a “small [but] consistent” effect from “us[ing] writing as a tool for learning content material” (Graham & Perin, 2007, pp. 5, 20), with an effect size of 0.23 based on 26 studies.<sup>3</sup> This approach “was equally effective for all content areas (social studies, math, and science) and grades (4–6 versus 7–12) studied” (Graham & Perin, 2007, p. 21).*
- **Cooperative learning.** One of Readence et al.’s (2004) top-level recommendations was to “Use small groups to enhance learning” (p. 10; emphasis in original). They claimed, “When students are encouraged to work collaboratively, rather than competitively, with peers, productivity and achievement are enhanced” (pp. 10–11). Discussing lesson planning, they further advised, “In order for students to become effective at communicating in a content area, they need ample opportunities to risk expressing their ideas. Small group activities encourage risk-taking and expression” (p. 98). This aligns with a broad range of findings and recommendations from the field of adolescent literacy.
  - *Reading Next identified text-based collaborative learning as one of the elements of effective adolescent literacy instruction that had “a substantial base in research and/or professional opinion” (Biancarosa & Snow, 2006, p. 12).*
  - *According to Nokes and Dole (2004), some researchers “agree that allowing students to work in groups is critical during the guided practice phase of explicit strategy instruction” (p. 169). Nokes and Dole cited research to the effect that “[s]ocial collaboration has been shown to be extremely motivating in regard to strategy use” (p. 169, citing Guthrie, Anderson, Alao, & Rhinehart, 1999; Swan, 2003) and noted Pressley’s (2002) contention that “small-group practice is a*

3 Ayers, 1993; Baisch, 1990; Bauman, 1992; Bell & Bell, 1985; Boscolo & Mason, 2001; Davis, 1990; Dipillo, 1994; Hand, Hohenshell, & Prain, 2004; Johnson, 1991; Kasperek, 1993; Konopak, Martin, & Martin, 1990; Langer & Applebee, 1987 (listed twice, for two different studies, with two effect sizes and two distinct instructional approaches); Licata, 1993; Lodholz, 1980; Madden, 1992; Millican, 1994; Moynihan, 1994; Nieswandt, 1997; Reaves, 1991; Rivard, 1996; Shepard, 1992; Stewart, 1992; Willey, 1988 (listed twice, with the same instructional approach used with different grade levels and subject areas, and with different effect sizes); Wong et al., 2002. Nineteen studies included students at grade 6 or older. All studies included students representing a full range of writers found in typical classrooms. Effect sizes for individual studies ranged from -0.77 to 1.68. Seven studies had a negative effect size.

key to the internalization of a strategy. It seems that students working in groups are forced to defend their choice of strategy and to explain their cognitive processes. Such interaction provides a review of the declarative, conditional, and procedural knowledge for both the explainer and the listener” (p. 169).

- *Cooperative learning*, defined by the National Reading Panel as describing strategies in which “peers instruct or interact over the use of reading strategies” (NICHD, 2000, p. 4-45), was identified by the NRP as a strategy that had “a firm scientific basis for concluding that [it] improve[s] comprehension in normal readers” (NICHD, 2000, p. 4-42).<sup>4</sup>
- **Scaffolding.** According to Readence et al. (2004), “As students become more adept, the demonstration and guidance teachers provide should be faded, or withdrawn, so students can be moved toward independence in their reading and learning” (p. 10). This aligns with calls for scaffolded reading comprehension instruction in *Reading Next* and other sources (see Biancarosa & Snow, 2006, p. 14; Nokes & Dole, 2004, pp. 167–170). One approach that has been recommended in this connection is the gradual release of responsibility model.<sup>5</sup>
- **Professional development for content-area teachers.** As noted above, many of the recommendations for improving students’ content-area literacy rely specifically on the actions of content-area teachers, who can help students develop the specific literacy skills and acquire the knowledge they need in order to succeed in a specific content area. Since content-area teachers have not traditionally been responsible for teaching literacy skills, this speaks to the need for professional development to prepare content-area teachers for this important role.
- **A cross-curriculum approach.** Describing instruction provided by content-area teachers in content-specific literacy skills, *Reading Next* recommended, “This instruction should be coordinated with the language arts teachers, literacy coaches, and other subject-area teachers” (Biancarosa & Snow, 2006, p. 15). This aligns with other recommendations elsewhere in *Reading Next* to create interdisciplinary teacher teams (p. 21) and to organize a comprehensive and coordinated literacy program with a cross-curriculum focus (p. 22).

### Specific Strategies

The list below describes some specific strategies that are supported by research and expert opinion to support development of content-area literacy and that are featured in *Jamestown Reading Navigator*.

Many of these specific strategies are based on the National Reading Panel’s review of research literature related to reading comprehension. Although in many cases the research does not specifically address use of these strategies with content-area texts, all of these represent strategies for which research has been conducted with content-area texts or strategies that have been recommended by one or more experts in the field of content-area literacy.

- **Graphic organizers.** Of all the comprehension strategies identified by the National Reading Panel, use of graphic organizers is one that was identified specifically with content-area texts.
  - *Based on the NRP’s definition*, graphic organizers refers specifically to a method in which “teachers instruct students to organize their ideas through the construction of graphs of ideas based upon what they read” (NICHD, 2000, p. 4-73).
  - *The NRP identified this as a strategy with a firm scientific basis, based on 11 studies (grades 2–8) involving use of social studies and science content-area texts* (NICHD, 2000, p. 4-45).<sup>6</sup> According to the NRP, “The empirical evidence indicates reliable and replicable effects on near transfer tasks of memory for reading content (six of seven studies). The main effect of graphic organizers appears to be on the improvement of the reader’s memory for the content that has been read. General effects are reported in four studies on achievement gains in content areas” (p. 4-45).

4 More detailed information on findings from the National Reading Panel related to general reading comprehension (as opposed to content-area literacy), including specific source citations for studies supporting NRP findings, is provided in the section on Comprehension earlier in this paper.

5 For more information about the gradual release of responsibility model, see the Comprehension section earlier in this paper.

6 Alvermann & Boothby, 1983, 1986; Armbruster, Anderson, & Meyer, 1991, 1992; Baumann, 1984; Berkowitz, 1986; Darch, Car-nine, & Kame’enui, 1986; Gordon & Rennie, 1987; Simmons et al., 1988; Sinatra, Stahl-Gemake, & Berg, 1984; Vidal-Abarca & Gilabert, 1995.

- Readence et al. (2004) endorsed the use of graphic organizers “across a broad range of subject areas,” as a prereading vocabulary strategy, and as a review guide (pp. 152–154, 211). Graphic organizers were also mentioned in *Reading Next as an example of a strategy that could be used by content-area teachers to help students understand and remember content* (Biancarosa & Snow, 2006, p. 15).
- **Summarization.** Another strategy that the NRP endorsed as having a firm scientific basis and that has been used with content-area texts was summarization, in which students are taught “how to identify the main or central ideas of a paragraph or a series of paragraphs” (NICHHD, 2000, p. 4-92, citing 18 studies, mostly at grades 5–6). At least four of the studies reviewed by the NRP utilized summarization of content-area texts.<sup>7</sup>
  - According to the NRP, “The effects [of summarization] are largely specific to improving the writing of summaries, but there are 11 studies that show transfer effects on recall of what was summarized and on question answering” (NICHHD, 2000, p. 4-46).
  - One of the top-level findings of the *Writing Next meta-analysis* was that instruction in writing summaries leads to improved summary quality (Graham & Perin, 2007, p. 4), with an effect size of 0.82 based on 4 studies.<sup>8</sup> Instruction in summarization thus has the potential not only to improve student comprehension of content-area texts, but also student performance on summary writing—a task that students are often called on to perform in content-area classes.
- **Question generation.** According to the NRP, “The strongest scientific evidence was found for the effectiveness of asking readers to generate questions during reading” (NICHHD, 2000, p. 4-45, based on review of 27 studies in grades 3–9).
  - Readence et al. (2004) specifically endorsed this strategy for content-area literacy instruction, stating, “Students can be taught to generate their own questions. If you truly want your students to become active, critical readers of text, you need to become familiar with strategies designed to help them develop a questioning approach to reading” (p. 173, citing Stevens, 2001).
  - Even more specifically, Pressley (2000) cited evidence in favor of why-questioning, in which students “[ask] themselves why-questions about facts presented in connected text,” declaring, “Why-questioning produces large effects on learning and can be used profitably by elementary and middle school students to learn material in factually dense text” (p. 553, citing Pressley, Wood, Woloshyn, Martin, King, & Menke, 1992).
- **Comprehension monitoring and metacognition.** Describing effective content-area literacy teaching and learning strategies, Readence et al. (2004) included strategies for helping improve students’ metacognition, defined as “awareness of one’s own mental processes, that is, knowing how you know what to do” (p. 253). According to the authors, “Too many students rove mindlessly through a textbook assignment without any clearly defined purposes or conscious strategies for learning” (p. 254). In order to improve students’ metacognition, they specifically recommended think-aloud strategies, in which “the teacher reads aloud from a text and verbalizes whatever comes to mind in an effort to show students how to reason during reading” (p. 254). They also recommended using “teacher-developed questions inserted in a text at key points which are crucial to understanding the entire passage” (p. 255).
  - These recommendations from Readence and colleagues connect to recommendations from a more general body of research related to comprehension monitoring and metacognition. For example, describing effective approaches for teaching reading comprehension, the *Reading Next report* mentioned “comprehension monitoring and metacognition instruction, which is instruction that teaches students to become aware of how they understand while they read” (Biancarosa & Snow, 2006, p. 13; emphasis in original). Comprehension monitoring—including procedures such as think-aloud—was also identified by the NRP as a comprehension strategy with a firm scientific basis, based on its review of experimental and quasi-experimental studies (NICHHD, 2000, p. 4-42).

7 Armbruster, Anderson, & Ostertag, 1987; Baumann, 1983; Berkowitz, 1986; Taylor & Beach, 1984. Determination of studies that were based on content-area texts was conducted through analysis of abstracts available through a Google Scholar search.

8 More detailed information on this finding, including specific source citations for studies included in the meta-analysis, is provided in the section on Writing later in this paper.

- **Identifying text structures.** According to Readence et al. (2004), “Knowledge of text structure helps to guide students’ comprehension of text” (p. 174). They elaborated: “It is erroneous to assume students will recognize and utilize organizational patterns. Direct teaching of the recognition of patterns is essential, and all patterns should be pointed out continually to students. The time you spend in stimulating the perception of organizational patterns . . . will facilitate comprehension” (p. 176). They identified the “most prominent” text organization patterns in content-area texts as including cause-effect, comparison-contrast, time order, and problem-solution (pp. 174–175).
- **Question answering.** Another strategy identified by the NRP as having a “firm scientific basis” was question answering (NICHHD, 2000, p. 4-42). Although the NRP stated, “The evidence is primarily that the effects are specific to increased success on experimenter tests of question answering,” they also identified question-answering as potentially useful as “part of multiple strategy packages where the teacher uses questions to guide and monitor readers’ comprehension” (NICHHD, 2000, p. 4-45). According to the NRP, “Students can . . . learn procedures for answering questions or what to do when they cannot answer a question. If students can develop these strategies, their learning from text is facilitated when the answers are available in the text” (p. 4-86). This finding suggests that learning and applying skills related to question-answering has the potential to transfer to learning from content-area texts.
- **Activation of prior knowledge.** According to Pressley (2000), “The mature reader knows much about the world. Such prior knowledge affects comprehension” (p. 549).
  - Pressley went on to endorse prior knowledge activation as a strategy that was supported by existing research (p. 554, citing Levin & Pressley, 1981).
  - Based on a review of 14 studies (grades 1–9), the NRP stated, “The activation of relevant world knowledge helps children understand and remember what they read. The activation of prior knowledge occurs naturally in contexts in which subject content is taught by the teacher, and readers then read text that relates to what has been learned. Prior knowledge activation occurs with several strategies, notably question elaboration, generation, and answering” (NICHHD, 2000, p. 4-85). However, the strategy did not reach the threshold of firm scientific basis in the NRP’s view.
  - According to Readence et al. (2004), “Most studies of student learning demonstrate the positive effects of prior knowledge as an aid to learning new concepts. Thus, content teachers should help students activate their prior knowledge before they begin a textbook or other reading assignment” (p. 38).
- **Vocabulary instruction.** Direct and explicit instruction in vocabulary is essential for content-area texts, in light of the importance of vocabulary as a key component of content-area knowledge. As Readence et al. (2004) wrote, “All groups of people . . . share special idioms and technical terminology which characterize the group. ‘Insiders’ use this vocabulary freely and through it gain access to the collective knowledge of the group. . . . The task of the content teacher is to help students become insiders whose minds move with facility in the fields of science, English, social studies, or mathematics. To a large extent, this is accomplished by teaching them the technical terminology of each discipline” (p. 139). Similarly, Blachowicz & Fisher (2000) cited Alvermann and Swafford (1989) and Swafford and Hague (1987) as “identif[y]ing the teaching of content vocabulary as a central goal of school instruction” (p. 510).
  - Several sources referenced the usefulness of vocabulary instruction as a tool in improving text comprehension in general. For example, the NRP cited a variety of studies that “underscore the notion that comprehension gains and improvement on semantic tasks are results of vocabulary learning” (NICHHD, 2000, pp. 4-15, 4-20, citing seven studies). This finding was specifically endorsed by Alvermann (2001) in the context of content-area instruction: “The importance of vocabulary knowledge to subject matter comprehension has been recognized since the 1920s (Whipple, 1925). Although the NRP reported research trends that suggest vocabulary instruction does facilitate comprehension, it drew no conclusions as to the most effective method or combination of methods, partly due to the large number of variables represented and the small number of studies that met the panel’s criteria for analysis. . . . Providing instruction in vocabulary development . . . is one way of meeting the demands of academic literacy” (Alvermann, 2001, p. 11).

- Similarly, Short and Fitzsimmons (2007) identified the importance of vocabulary instruction as part of English language learners' content-area learning: "Teachers develop the students' English language proficiency by building background knowledge and vocabulary from subject areas that students are likely to study or from courses the students may have missed if they are new to the school system" (p. 28).
- According to Readence et al. (2004), "If there is one thing which contributes most heavily to the burdens of learning technical vocabulary, it is the simple lack of direct instruction. Teachers frequently assume that students will automatically assimilate new words just because they are introduced in textbook assignments. This is a mistake. While incidental learning of word meanings may occur with narrative, story-type material, even across cultures . . . this will, more than likely, not occur with textbook material" (p. 148).
- **Text content teaching aids.** According to *Reading Next*, "The use of such tools as . . . prompted outlines, structured reviews, guided discussions, and other instructional tactics that will modify and enhance the curriculum content in ways that promote its understanding and mastery have been shown to greatly enhance student performance—for all students in academically diverse classes, not just students who are struggling" (Biancarosa & Snow, 2006, p. 15).

**How Jamestown Reading Navigator Supports Development of Content-Area Literacy**

The following table describes how *Jamestown Reading Navigator* aligns with instructional recommendations described above for helping students develop content-area literacy.

Summary of Content-Area Literacy Recommendations	Application Through <i>Jamestown Reading Navigator</i>
Comprehension strategies should be explicitly taught using content-area texts.	Each journey (lesson) in Treks (levels) 2–4 in <i>Jamestown Reading Navigator</i> has a specific comprehension skill/strategy focus. These skills are taught using a combination of explicit instruction and applied practice with text selections. Many of the selections are example content-area texts from a variety of subject areas, including science, social studies, literature, math, geography, music, art, health, and history.
Students should receive instruction in skills that are likely to be helpful in interpreting content-area texts. Many of the specific comprehension skills/strategies that are covered in the journeys in Treks 2–4 have a clear potential applicability to content-area texts:	<p>Many of the specific comprehension skills/strategies that are covered in the journeys in Treks 2–4 have a clear potential applicability to content-area texts:</p> <ul style="list-style-type: none"> <li>• Analyzing media</li> <li>• Connecting across texts</li> <li>• Drawing conclusions</li> <li>• Finding the main idea and details</li> <li>• Identifying sequence</li> <li>• Making inferences</li> <li>• Making predictions</li> <li>• Questioning to get information</li> <li>• Questioning to monitor comprehension</li> <li>• Recognizing cause and effect</li> <li>• Recognizing fact and opinion</li> <li>• Recognizing problem and solution</li> <li>• Summarizing</li> <li>• Understanding author's purpose and viewpoint</li> <li>• Understanding compare and contrast</li> <li>• Understanding graphic information</li> <li>• Understanding text structure (cause and effect, compare and contrast, narrative and informational, problem and solution, sequence)</li> <li>• Using context</li> <li>• Visualizing</li> </ul>

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Summary of Content-Area Literacy Recommendations	Application Through <i>Jamestown Reading Navigator</i>
Guidance should be provided to students—	<i>Jamestown Reading Navigator</i> includes extensive activities before, during, and after reading in Treks 2–4 to help reinforce students’ understanding of texts.
<ul style="list-style-type: none"> <li>• Before reading content-area texts</li> </ul>	<ul style="list-style-type: none"> <li>• Prior to the activity, students are taught a reading skill to use in conjunction with the reading selection and are pretaught key vocabulary from the selection. This includes modeling of the reading skill.</li> <li>• Also prior to the activity, students complete an activity—typically including a graphic organizer, a background builder, or an anticipation guide—to activate prior knowledge about the topic of the selection. For example, students are often prompted to complete a KWL (Know/Want to know/Learned) chart or a word web. Students also use the computer to accept a suggested purpose for reading or write their own purpose.</li> <li>• An optional on-site professional development session is available that covers “front loading” strategies to help with accessing prior knowledge, building concepts and schema, and teaching vocabulary prior to reading.</li> </ul>
<ul style="list-style-type: none"> <li>• While reading content-area texts</li> </ul>	<ul style="list-style-type: none"> <li>• As students are reading the text selection, reading tips remind them to use comprehension strategies. They are also prompted to answer comprehension monitoring questions. Immediate feedback reinforces correct answers.</li> <li>• Students can use the Add a Note feature to record thoughts while they are reading the selection, linked to specific points in the text. Students can access these notes at any time during reading, and also after reading while reviewing the selection before the Journey Test and during the writing assignment.</li> <li>• Vocabulary words in the text selection are hyperlinked to word cards. Students can access these word cards, read information about the definitions of words, and record notes on the word cards—for example, ways that the word is used in the selection. Students can also access an online dictionary to look up words that are not vocabulary words.</li> </ul>
<ul style="list-style-type: none"> <li>• After reading content-area texts</li> </ul>	<ul style="list-style-type: none"> <li>• After the reading, students revisit their purpose for reading, decide whether they accomplished that purpose, and then tell what they learned from reading the selection or choose from possible ideas about why they failed to accomplish their purpose. Students also revisit and update their work from the before-reading activity (e.g., updating the KWL chart).</li> <li>• Students complete a writing activity that typically requires them to incorporate content from the text selection or build on the selection in some way. Students are able to access the selection while completing the writing activity.</li> </ul>
Instruction in literacy strategies should include modeling of strategy use with content-area texts.	<p><i>Jamestown Reading Navigator</i> incorporates modeling of text comprehension strategies in several ways. All of the modeling techniques in the online program are applied to content-area text selections.</p> <ul style="list-style-type: none"> <li>• Animations in the online Focus on the Skill and Look Back at the Skill sections model strategy use by reading aloud a text and using a think-aloud procedure to demonstrate use of strategies, so the process is apparent to students.</li> <li>• From these same sections, students can use the Tutor buttons to access yet another explanation of the reading skill, with another modeling of a think-aloud.</li> </ul>

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Summary of Content-Area Literacy Recommendations	Application Through <i>Jamestown Reading Navigator</i>
<p>Instruction in literacy strategies should include modeling of strategy use with content-area texts. <i>(continued)</i></p>	<ul style="list-style-type: none"> <li>• The <i>Reteaching Skills Support</i> resources include a section titled Teacher Modeling for every skill. This section provides a sample passage and explicit guidance to the teacher on modeling use of the skill for students.</li> <li>• The online professional development module on reading comprehension includes a reading specialist demonstrating how she uses teacher modeling with students, including use of think-alouds.</li> </ul>
<p>Students should receive feedback on their efforts to understand content-area texts.</p>	<p><i>Jamestown Reading Navigator</i> includes a broad array of strategies for assessing students' use of reading strategies with content-area texts and providing that feedback to students.</p> <ul style="list-style-type: none"> <li>• Students receive immediate feedback on all of their scored online activities and assessments.</li> <li>• In many cases, the feedback is substantive, showing whether their choice was correct or incorrect, what the correct choice was, and often why an answer was correct or incorrect.</li> </ul> <p>For more detail about assessments and feedback in <i>Jamestown Reading Navigator</i>, see the Formative and Summative Assessment section later in this paper.</p>
<p>Instruction should incorporate writing about content-area texts.</p>	<ul style="list-style-type: none"> <li>• A regular part of each online journey is a writing activity in which students typically build on or respond to the text selection they have read for that journey. In many cases, this includes writing about the content of text selections that are drawn from various subject areas. (For more information, see the Writing section later in this paper.)</li> <li>• The online professional development module on writing includes observing and analyzing various instructional strategies for teaching writing in content-area classrooms.</li> </ul>
<p>Instruction should incorporate speaking and listening related to content-area texts.</p>	<p><i>Jamestown Reading Navigator</i> includes extensive activities for students to speak and listen related to texts, including content-area texts, in the context of collaborative text-based activities. (See the next row in this table.)</p>
<p>Instruction should provide opportunities for students to work together collaboratively in small groups in processes related to content-area texts.</p>	<p>Students have multiple opportunities to work together in a variety of processes related to the texts they read and write about in <i>Jamestown Reading Navigator</i>, including content-area texts.</p> <ul style="list-style-type: none"> <li>• The <i>inClass Readers</i> include end-of-selection questions for partner or small-group discussions.</li> <li>• The <i>inClass Reader Teacher Guide</i> also provides suggestions for literature circle activities and discussions in conjunction with the <i>inClass Reader</i> selections, including nonliterary texts. These activities provide opportunities for students to discuss what they have read and how it relates to the guiding question of the quest (unit). For example, literature circle discussion questions for the guiding question "What makes me healthy?" include "How are medicine, yoga, and martial arts alike, and how are they different?" and "How does your health affect your life?"</li> <li>• The <i>Reteaching Skills Support</i> resources for Treks 2–4 include small-group activities for interacting with text, for students who need additional instruction to help them learn specific skills.</li> <li>• Vocabulary activities in the <i>Jamestown Reading Navigator</i> lesson plans and suggestions in the <i>Teacher Resource Guide</i> section on Enriching Vocabulary include recommendations for collaborative activities in which students discuss the meanings of words or create graphic organizers to make associations to words.</li> </ul>

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Summary of Content-Area Literacy Recommendations	Application Through <i>Jamestown Reading Navigator</i>
<p>Instruction should provide opportunities for students to work together collaboratively in small groups in processes related to content-area texts. <i>(continued)</i></p>	<ul style="list-style-type: none"> <li>• Writing activities in the <i>Jamestown Reading Navigator</i> lesson plans and suggestions in the <i>Teacher Resource Guide</i> section on Improving Writing include recommendations for collaborative activities in which students discuss and respond to each other’s writing, interact over their writing, and collaboratively complete portions of the writing process.</li> <li>• The online professional development module on comprehension provides numerous suggestions for engaging groups in collaborative activities before, during, and after reading. The online professional development module on vocabulary includes collaborative activities for vocabulary learning.</li> </ul> <p>For more details, see the section on Text-Based Collaborative Learning later in this paper.</p>
<p>Student learning of reading skills and strategies should be scaffolded, using a model such as the gradual release of responsibility that helps students achieve independent strategy use.</p>	<p>The gradual release of responsibility model used by <i>Jamestown Reading Navigator</i> includes the following components:</p> <ul style="list-style-type: none"> <li>• <b>Focus lessons.</b> <i>Jamestown Reading Navigator</i>’s journeys provide extensive modeling of critical reading and vocabulary skills that students use as they work through lessons online. In each journey in Treks 2–4, an animated lesson related to the selection topic describes and models a reading skill. For students who need additional support, <i>Reteaching Skills Support</i> resources provide further guidance to teachers for modeling skills and strategies as needed.</li> <li>• <b>Guided instruction.</b> <ul style="list-style-type: none"> <li>– In each journey in Treks 2–4, a skill-based activity prior to the reading selection helps students practice the reading skill and provides substantive feedback on their performance.</li> <li>– During this activity, additional guidance on the skill is immediately available to students by clicking the Tutor button, which reteaches the reading skill by using different language, strategies, and format.</li> <li>– While students are reading text selections online, they are reminded to use appropriate reading skills and strategies.</li> <li>– Students are tested on the reading skill for each journey in the Journey Test and are routed to an animated skill lesson with new examples of the reading skill if they do not perform well on skill-related questions. They are then reassessed on the skill. If students still do not do well on the skill, they are entered on the Reading Skill Intervention Report, so that the teacher knows to prepare additional instruction for them using the <i>Reteaching Skills Support</i> resources.</li> <li>– InClass Reader selections prompt students to use specific reading skills and offer teachers additional opportunities to facilitate students’ learning of skills through guided instruction.</li> </ul> </li> </ul>

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## ANALYSIS AND RESULTS

Summary of Content-Area Literacy Recommendations	Application Through <i>Jamestown Reading Navigator</i>
<p>Student learning of reading skills and strategies should be scaffolded, using a model such as the gradual release of responsibility that helps students achieve independent strategy use. <i>(continued)</i></p>	<ul style="list-style-type: none"> <li>• <b>Collaborative learning.</b> The program incorporates collaborative learning opportunities in the form of <i>inClass Reader</i> group activities and <i>Reteaching Skills Support</i> activities.               <ul style="list-style-type: none"> <li>– As students read the <i>inClass Reader</i> selections, margin notes prompt them to use skills they have learned in order to understand the text. These questions and prompts can be used by the teacher as the basis for collaborative group discussions among students who are reading the same texts at the same time.</li> <li>– After students have read the <i>inClass Reader</i> selections for each quest, teachers are prompted to organize students into literature circles. Within the literature circles, they discuss specific questions that relate to the <i>inClass Reader</i> selections and to the guiding question for the quest.</li> <li>– Also within the literature circles, students complete a hands-on collaborative activity, such as creating summary cards or playing a game.</li> <li>– <i>Reteaching Skills Support</i> resources incorporate small-group discussion opportunities to help ensure that students practice and apply what they have learned.</li> </ul> </li> <li>• <b>Independent learning.</b> Work with multiple texts over the course of <i>Jamestown Reading Navigator</i> provides students with the opportunity to internalize new skills and strategies as they move through the journeys and treks. Quest assessments test for transfer of important reading skills to unfamiliar texts, and <i>inClass Readers</i> and <i>inTIME</i> Magazines offer students engaging opportunities to read independently and apply the reading skills and strategies they have learned.</li> </ul>
<p>Professional development should be provided to help content-area teachers incorporate effective literacy instruction into their classes.</p>	<ul style="list-style-type: none"> <li>• <i>Jamestown Reading Navigator</i> offers an on-site professional development session for content-area teachers, titled Using Reading as a Process for Content-Area Instruction. The session focuses on helping content-area teachers learn strategies for presenting subject-area texts so that their students use reading as a tool for learning and mastering content-area standards.</li> <li>• The online professional development modules on oral reading fluency, vocabulary, reading comprehension, and writing include information that is appropriate for helping content-area teachers incorporate effective literacy practices into their instruction.</li> </ul>
<p>Schools should develop a comprehensive and coordinated cross-disciplinary approach to content-area literacy.</p>	<p><i>Jamestown Reading Navigator</i> offers on-site professional development sessions that focus on building a school literacy community. These sessions provide opportunities for schools to develop or revise a school literacy plan that incorporates <i>Jamestown Reading Navigator</i>, regular language/literacy courses, content-area instruction, and other school resources. These sessions are designed to include content-area teachers as participants.</p>

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Summary of Content-Area Literacy Recommendations	Application Through <i>Jamestown Reading Navigator</i>
<p>Students should be taught to use graphic organizers with content-area texts.</p>	<p>Students are guided to use many different graphic organizers in a variety of settings within <i>Jamestown Reading Navigator</i>.</p> <ul style="list-style-type: none"> <li>• Graphic organizers are often used online as part of the before-reading and after-reading activities. This includes use with content-area texts.</li> <li>• The <i>Reteaching Skills Support</i> for teachers includes many suggestions for using graphic organizers to help students learn comprehension strategies.</li> <li>• The <i>Teacher Resource Guide</i> section on Enriching Vocabulary includes several suggestions for using graphic organizers to help students explore concepts represented by new vocabulary words.</li> <li>• Teachers are prompted to have students use graphic organizers as tools for practicing specific skills as they read print selections in the <i>inClass Readers</i>.</li> <li>• An optional on-site professional development session on Using Manipulatives to Create Reading Independence provides guidance to teachers on how to create and use graphic organizers and on teaching students how to use them.</li> <li>• Blackline masters are provided for 20 graphic organizer formats teachers might want to use with their students.</li> </ul>
<p>Students should be taught to write summaries of content-area texts.</p>	<ul style="list-style-type: none"> <li>• Students are taught summarization as the focus reading skill/strategy in two journeys each in Treks 2 and 3 and in one journey in Trek 4, using content-area texts in most cases.</li> <li>• Students are taught to find the main idea and details as the focus skill for two journeys each in Treks 2 and 3, using content-area texts in some cases.</li> <li>• For both of these skills, <i>Reteaching Skills Support</i> provides additional activity suggestions and resources to help students further develop the skill as needed.</li> </ul>
<p>Students should be taught to generate questions based on content-area texts.</p>	<p>Several <i>Jamestown Reading Navigator</i> reading skills teach students how to generate questions related to texts for specific purposes, including use with content-area texts. Some of the skills that feature question generation include</p> <ul style="list-style-type: none"> <li>• Analyzing media (covered in Treks 2, 3, and 4)</li> <li>• Connecting across texts (Treks 2 and 3)</li> <li>• Finding the main idea and details (Treks 2 and 3)</li> <li>• Questioning to get information (Treks 2 and 3)</li> <li>• Questioning to monitor comprehension (Treks 2, 3, and 4)</li> <li>• Recognizing problem and solution (Treks 2 and 3)</li> <li>• Summarizing (Treks 2, 3, and 4)</li> <li>• Understanding text structure: cause and effect (Treks 2 and 3)</li> <li>• Understanding text structure: sequence (Treks 2 and 3)</li> <li>• Understanding the author's purpose (Treks 2, 3, and 4)</li> <li>• Understanding the author's viewpoint (Treks 2, 3, and 4)</li> <li>• Visualizing (Treks 2 and 3)</li> </ul>

Continued ➔

## ANALYSIS AND RESULTS

Summary of Content-Area Literacy Recommendations	Application Through <i>Jamestown Reading Navigator</i>
<p>Instruction should help students develop metacognitive abilities to monitor their own comprehension while reading content-area texts.</p>	<p><i>Jamestown Reading Navigator</i> helps students develop their metacognitive and comprehension monitoring abilities in several ways.</p> <ul style="list-style-type: none"> <li>• Questioning to monitor comprehension is taught as a focus skill in three journeys, one each in Treks 2, 3, and 4. One of these uses a content-area text.</li> <li>• Students are prompted to think about their reading with comprehension monitoring questions, note-taking prompts, and reading tips as they read the various journey text selections, including content-area texts.</li> <li>• Additional resources for teaching comprehension monitoring are provided in the <i>Reteaching Skills Support</i> materials, in case teachers decide that students need additional instruction and practice with this skill.</li> <li>• The online professional development module on comprehension models use of think-alouds to demonstrate comprehension monitoring. This module also encourages teachers to have students ask themselves questions about what they are reading.</li> <li>• An optional on-site professional development session titled <i>Monitoring Comprehension and Using Fix-up Strategies</i> helps teachers develop activities to teach students how to (a) recognize when comprehension breaks down and (b) use strategies to clarify their understanding.</li> </ul>
<p>Students should be taught to recognize and analyze text structures.</p>	<p><i>Jamestown Reading Navigator</i> includes explicit instruction to help students learn how to identify and analyze a variety of text structures, including</p> <ul style="list-style-type: none"> <li>• Cause and effect (Treks 2 and 3)</li> <li>• Compare and contrast (Treks 2 and 3)</li> <li>• Narrative and informational (Treks 2 and 3)</li> <li>• Problem and solution (Trek 4)</li> <li>• Sequence (Treks 2 and 3)</li> </ul>
<p>Students should be taught strategies for answering questions about texts and provided with practice in applying those strategies.</p>	<p><i>Jamestown Reading Navigator</i> provides students with instruction in question answering strategies and ample practice in answering questions both during and after reading, based on the online and <i>inClass Reader</i> selections.</p> <ul style="list-style-type: none"> <li>• <i>Jamestown Reading Navigator</i> teaches students to look for signal words to answer questions. For example: <ul style="list-style-type: none"> <li>– Lessons on sequencing guide students to look for signal words such as <i>first</i>, <i>next</i>, <i>then</i>, and <i>finally</i> to answer questions such as “What happened last in the story?” and “What is the sequence of events that led to the . . . ?”</li> <li>– Lessons on cause and effect teach students to look for signal words such as <i>because</i>, <i>since</i>, and <i>due to</i> to answer questions such as “What caused the explosion?”</li> <li>– Lessons on fact and opinion teach students to look for words and phrases that signal an opinion, such as <i>better</i>, <i>beautiful</i>, <i>I feel</i>, <i>I think</i>, and <i>I believe</i>.</li> </ul> </li> <li>• <i>Jamestown Reading Navigator</i> teaches students to read the title and labels in graphic information in order to answer questions.</li> <li>• Comprehension monitoring questions appear throughout the online and <i>inClass Reader</i> selections. For example, while reading a selection about someone traveling on the <i>Titanic</i>, students are prompted to select an answer about that person’s reasons for traveling on the <i>Titanic</i>. Students receive immediate substantive feedback to questions they answer while reading the online selections.</li> </ul>

Summary of Content-Area Literacy Recommendations	Application Through <i>Jamestown Reading Navigator</i>
Students should be taught strategies for answering questions about texts and provided with practice in applying those strategies. <i>(continued)</i>	<ul style="list-style-type: none"> <li>• After reading an online selection, students take a Journey Test with 10 comprehension questions based on the selection. They receive immediate substantive feedback on their answers.</li> <li>• After reading an <i>inClass Reader</i> selection, students complete an online quiz that includes five comprehension questions.</li> <li>• Scores on the Journey Test and the <i>inClass Reader</i> quizzes are recorded in the Learner Management System and reported to teachers. This allows them to monitor how well students are doing with answering questions based on the text selections.</li> </ul>
Students should be taught to activate prior knowledge in reading content-area texts.	<ul style="list-style-type: none"> <li>• Prereading activities for each online selection prompt students to activate their prior knowledge about the selection's topic. For example, students are often prompted to complete a KWL (Know/Want to know/Learned) chart or a word web prior to reading a selection, which prompts them to remember and process information they already know about the topic.</li> <li>• The model lesson plan provided in the <i>Teacher Resource Guide</i> for use with the <i>inClass Reader</i> selections includes strategies for activating prior knowledge before students read the text selections.</li> </ul>
Students should be taught vocabulary to improve their content-area text comprehension.	<i>Jamestown Reading Navigator</i> includes an extensive program for developing students' vocabulary knowledge, focusing in particular on vocabulary that is used in the text selections for each journey. Many of these text selections are from content-area texts. In some cases, vocabulary selected for instruction has specific content-area meaning. (For more information, see the Vocabulary section earlier in this paper.)
Content-area teachers should use text content teaching aids such as prompted outlines, structured reviewed, and guided discussions.	The on-site professional development session for content-area teachers on Using Reading as a Process for Content-Area Instruction covers use of strategies such as structured overviews, anticipation guides, prompted outlines, concept mapping, prediction guides, guided discussions, "Say Something" activities, "React" activities, and reciprocal reading.

INTRODUCTION References

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## SUPPORT FOR CONTENT-AREA LITERACY

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