



Middle School Matters Field Guide: Research-Based Principles, Practices, and Tools

Chapter 1: Research-Based Instruction Reading and Reading Interventions



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Reading and Reading Interventions

Extensive research and numerous syntheses have been conducted in the area of reading instruction and intervention for middle grades students with reading difficulties. In particular, the Institute of Education Sciences has issued a guidance document to assist schools in making research- and evidence-based decisions about improving instruction for adolescents with reading difficulties.¹ This section uses extant research and data to provide an overview of nine research- and evidence-based principles for improving reading achievement for all students and gives specific examples of research- and evidence-based interventions to support students who are reading below grade level. These principles are accompanied by specific practices that schools and teachers can implement, followed by examples of activities and lessons that can be used with students to improve reading.

In elementary school, reading may be considered an independent subject, but in middle school, reading is involved in all subject areas, so every teacher should be considered a reading teacher. Therefore, the reading strategies in this section should be implemented school wide, as part of a school culture that works toward high levels of student achievement in reading. Specific interventions and strategies are provided to support students who struggle to learn to read and perform below grade level, as well as students who are English language learners (ELLs). Providing opportunities for students to practice these reading strategies in every subject every day will enhance development of the reading skills they need to become better readers and more accomplished students.

Principle 1:

Establish school wide practices for enhancing reading for understanding in all content area instruction.

Providing appropriate and adequate reading instruction for middle grades students is the responsibility of all content area teachers (including those who teach English language arts, science, social studies, mathematics), and teachers of English language development classes for students learning English. There are several instructional practices that content area teachers can use to enhance reading opportunities for all students without detracting from content area instruction.

Practice 1: *Identify key words for learning, teach at least two words^a per class every day, and review one word from previous instruction.*

This practice can be readily implemented across all content area instruction and provides students with opportunities to expand their academic vocabulary, increase their background knowledge, and better understand the key ideas about which they are reading and learning. For example, a social studies teacher delivering a unit on political and economic systems could teach two new words that relate to the learning they will be addressing that day, such as *socialism* and *depression*. Then, the teacher could review a word that is related but was previously taught, such as *federalism*. One way teachers can accomplish this practice is to select words in a unit that are high priority and high utility. Assuming that a unit is three weeks long, a teacher can determine the key words students will need to know and explicitly teach them each week. The teacher and students can review the vocabulary in subsequent weeks as related content allows for further exploration of the terms, as well as opportunities

to use academic language in reading and writing about the content.

There are several ways important vocabulary words can be taught and reviewed, including the following three methods:

1. Teachers can take advantage of vocabulary maps² that use the key word and a student-friendly definition, show pictures of the word, provide related words, and give examples of how the word can be used.
2. Teachers can demonstrate the relationships between words using a concept map that starts with an overarching topic or concept and branches out along lines and arrows to component academic and technical vocabulary, examples, characteristics, and graphics or symbols.³
3. Teachers can teach key words that students use in their written and oral arguments for a debate or a structured discussion.^{4, 5}

The types of strategies described above support the learning of all students and are particularly helpful to students learning English.⁴ However, teachers need to be aware that students who are not yet proficient in English will need additional help to master academic vocabulary that may be familiar to native English speakers (e.g., words like *compare* or *analyze*).

^a Learning just two words a day is insufficient for students learning the English language or those who are seriously behind their peers; therefore, the number of new words per day will depend on the needs of the students.

Practice 2: *Instruct students to ask and answer questions while they read to monitor comprehension and learning.*

Students who are actively engaged while listening and reading are more likely to understand and remember what they hear or read.^{6, 7, 8} Teachers can promote this practice by instructing students in how to ask and answer questions while they are reading. Some questions teachers can use while modeling the practice include the following:

- What is about the “big idea” or main point of the reading?
- How does this relate to the vocabulary we are learning?
- In what way did the previous step, event, or action influence what happened?

- How does this key character or historical figure behave and why does he behave this way?
- How does the author support his or her point?

Teachers should “think aloud” to demonstrate how they consider what kind of information a given question is targeting, where in the text important information related to the question is located, and how to use information in the text to both answer a question and develop a question that can be used to self-monitor learning and comprehension.

Another way to help students be actively engaged in their reading is to ask them to develop one question to ask the class once they have completed their reading. Teachers can use sample question stems to help students develop their own questions.

PRACTICE 2 EXAMPLE APPLICATION: Sample Question Stems

- How did what happened at the end differ from _____?
- How would you compare _____?
- How do you think the author could have better written the _____?
- What do you think would happen if _____?
- How do you think _____ might have been prevented?
- How would you interpret _____?
- Why do you think the author _____?
- Who else do you think could have influenced _____?
- What was the most important finding related to _____?

Note: Generating questions will also be addressed in Principle 4, Practice 1, which expands on the use of comprehension strategies for self-monitoring while reading complex texts.

Practice 3: Teach students to comprehend the relationships among ideas using graphic organizers.

Graphic organizers (see examples in Figures 1 and 2) have been associated with improved vocabulary knowledge and comprehension, particularly when used with informational text.^{9, 10, 11} These learning tools have an advantage over traditional outlines because they can present a single visual display of the relationships among a variety of ideas in a text. The arrangement of the information on the page can support students in understanding how details support main ideas. Graphic organizers include matrices, webs, maps, and diagrams. The particular format of the graphic organizer should align with the purpose of the lesson. The examples that follow demonstrate the difference in how information is arranged to show a comparison-contrast and to show the steps of a process.

If the graphic organizer does not match the structure of the information, the value of the tool might be lost. Therefore, teachers need to provide appropriate graphic organizers and show students how to select or design these tools to support their understanding of content and concepts. Variations of graphic organizers are mentioned in Principle 1, Practice 1 (vocabulary and concept maps); Principle 7, Practice 1 (advanced organizers); and Principle 8, Practice 1 (learning logs).

When introducing a new graphic organizer, teachers should explain the format and what kind of information that it should contain. Then, teachers should model how to complete an organizer, using information or vocabulary from a text. Students need time to practice using the tool with feedback from their teacher before they can be expected to apply it independently.

PARTS OF A CIRCLE

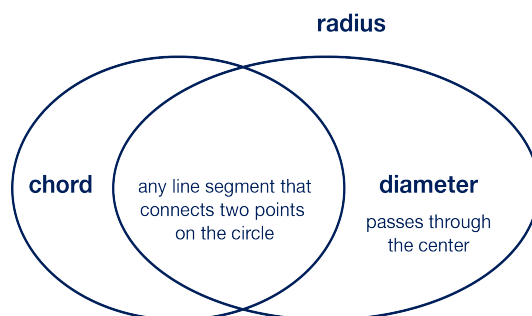


FIGURE 1. Example graphic organizer for comparing and contrasting the parts of a circle

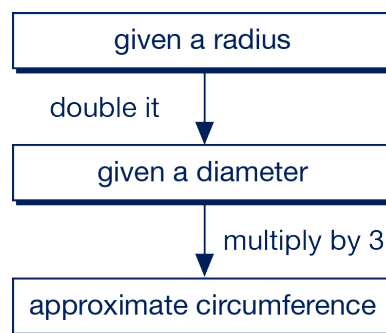


FIGURE 2. Example graphic organizer to show the steps in determining the circumference of a circle

Principle 2:

Teach word-meaning strategies within content area classes.

Middle school students' knowledge of general academic terms used across the content areas has been linked to their academic achievement.¹² But cross-discipline word knowledge is only part of what students need to know to be successful in their classes. Content areas (e.g., mathematics, science, social studies, English language arts) each have unique vocabulary used to communicate concepts and explain processes.¹³ These discipline-specific concept words are the center of learning the big ideas and are used in conjunction with general academic vocabulary to communicate essential information. Students need to learn what these words mean and how to use them within the multiple contexts of reading, writing, and speaking. Reviews of research on academic vocabulary instruction have found evidence of effectiveness for the following two practices: explicit instruction in important words and instruction in word learning strategies.^{5, 14}

Practice 1: *Provide explicit instruction for important words.*

Teachers identify the important academic or concept words students need to learn to master the key ideas being taught. They introduce these words with a picture, video, or other demonstration to make the words vivid.¹⁵ Teachers then engage students in a discussion about what the words mean and don't mean, extending this understanding to the text and important ideas they are learning. A critical next step for teachers is to return to these words regularly throughout the lesson and instructional unit to ensure that students can correctly use the words in speaking and writing tasks.¹⁶ It is important that students be taught the meaning of vocabulary words in the context of learning and also the multiple meanings of words. Exploring the different meanings of words as used

in different contexts is also recommended for supporting ELLs, who tend to know fewer words and fewer definitions for multiple meaning words than native English speakers.^{4, 17}

Resources for implementing this practice can be found online at the Middle School Matters Institute website:

- Vocabulary Maps Toolkit
<https://greatmiddleschools.org/toolkits/reading/vocabulary-maps/>
- Frayer Model Toolkit
<https://greatmiddleschools.org/toolkits/reading/frayer-model/>

Practice 2: *Provide instruction in word-learning strategies.*

Although explicit instruction is important (Practice 1), the sheer number of words students need to learn requires that they develop strategies for independently determining the meanings of unfamiliar vocabulary. One means of equipping students to understand the content area terms they encounter is to teach morphemes (prefixes, roots, and suffixes) and how they contribute to the meaning of words.^{5, 14} Research conducted with middle school students has found their awareness of morphemes is related to their academic vocabulary knowledge and contributes significantly to their reading comprehension.¹⁸ Other research indicates the practice of using morphemes systematically, coupled with multiple opportunities for practice, is particularly effective for English language learners.⁴ This process can be facilitated by applying learned morphemes to words used in different content areas.

PRACTICE 2 EXAMPLE APPLICATION: Morpheme Examples Across Content Areas

Root word: circu(m)—going or moving around

- English language arts: circumlocution = circum + locut + -ion
 - Math: circumference = circum + fer + -ence
 - Science: circulation = circu + lat(e) + -ion
 - Social studies: circumnavigate = circum + navig + -ate
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Another word-learning strategy involves teaching word meanings directly through the use of a mnemonic word association and a picture that ties together the word clue and the definition.^{19, 20} The following is an example of this kind of mnemonic strategy:

PRACTICE 2 EXAMPLE APPLICATION: Making Mnemonic Connections for Words

Teachers can use the following figure to present the word *analyze* to students. The teacher would show the card to students and explain the mnemonic connections among the picture, the play on words with “ant’s eyes,” and the definition.

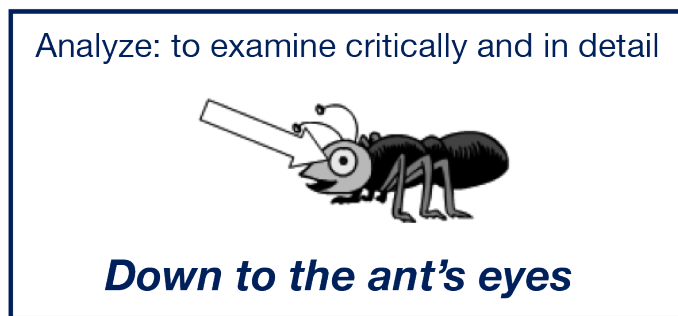


FIGURE 3. Example of mnemonic connection for the word *analyze*

Principle 3:

Activate and build appropriate background knowledge for understanding text content.

Researchers report that background knowledge is important to adolescents' reading comprehension.^{15, 21} A lack of prior knowledge can make reading and understanding informational texts particularly challenging for native English-speaking students and English language learners alike.^{22, 23}

Practice 1: *Instruct students to use text to support answers.*

Successful use of text evidence requires adequate preparation to help students attend to pertinent information as they read. The following are examples of anticipatory statements that could be used in the different content areas to stimulate students' thinking before reading:

- English language arts—The narrator in a story is a reliable source of information.
- Mathematics—It is always better to use π than 3.14.
- Science—It is important to keep everything as clean and free of bacteria as possible.
- Social studies—The use of trade embargoes is an effective diplomatic tool.

These statements are generated based on key concepts about to be encountered in a text and are considered anticipatory because students must determine whether they could or could not adequately support the statement on the basis of their prior learning. Asking students to consider these statements prior to reading about the targeted information makes them aware of their current understanding and beliefs. As students read the new text, they will look for additional or novel text evidence to support or amend their views. It is important to note that the statements are not phrased in a true-or-false format,

which would ultimately require students to locate and know a single, correct answer. Rather, the statements are open to alternative viewpoints that can be supported with evidence from different sources.

During and after reading the text, teachers should instruct students to consider whether the author presented text-based evidence for particular positions on the key ideas or concepts. Students should be asked to evaluate the evidence in the text and elaborate on why their initial views could or could not be supported. According to researchers, this technique requires students to identify related background knowledge in their memories to link to the statements and provide adequate justification for their responses.²⁴ When used in connection with text reading, it encourages students to return to important information to obtain further elaboration for their responses.¹⁵

Activating students' thinking about key concepts prior to reading is particularly important for assisting English language learners and students with learning disabilities in drawing upon relevant knowledge that can be used to support comprehension of new and unfamiliar information.²² It also focuses students' attention on what is most important in the text so that they are not distracted by interesting but insignificant details.

Principle 4:

Teach students to use reading comprehension strategies while reading complex text.

Students benefit from using reading comprehension strategies while reading complex text. Without sufficient instruction, adolescents tend to proceed through text with little understanding of what they are reading or awareness of when their comprehension has broken down.^{25, 26} Students' understanding improves when they can recognize they are not adequately understanding text and use "fix-up" strategies to build comprehension.²⁷

Practice 1: *Instruct students to generate questions while reading to build comprehension.*

Teaching students to generate questions while reading is one way of getting them to stop at regular intervals to think about what is being communicated and how the information relates across paragraphs. Studies have shown that this practice can increase comprehension of content area text for students of different ability levels.^{7, 27, 28} Table 1 shows the different levels of questions students can be taught to generate in support of their comprehension. Level 1 questions are the most literal because they are based on a fact that can be identified in one place in the text. Level 2 questions require students to combine information that is located in two different parts of the text. Level 3 questions relate information in the text to something the reader has experienced or learned previously.

Resources for implementing Practice 1 can be found online at the Middle School Matters Institute website:

- Generating Leveled Questions
<https://greatmiddleschools.org/toolkits/reading/generating-leveled-questions/>

Practice 2: *Instruct students to generate main ideas at regular intervals in a text.*

Another means of encouraging students to be active readers and monitor their own comprehension is to teach them how to generate a main idea statement for single or multiple paragraphs and to use the key idea to make connections to previous and current learning.³¹ Adolescents who learn to identify the explicitly or implicitly stated main ideas of a text demonstrate increased understanding and recall of important information.³² Using a strategy referred to as *Paragraph Shrinking*³¹ or *Get the Gist*,²⁷ students at a range of ability levels and language backgrounds have been successfully taught to use three steps to generate a main idea statement:

1. Identify the key "who" or "what" that is the focus of the paragraph or section.
2. Determine the most important information about what the key person, place, or thing has, is, or does.
3. Succinctly state the "who" or "what" and most important information about him, her, or it in a sentence.

Get the Gist will also be addressed in Principle 8, Practice 1, which expands on this and other strategies by having students work collaboratively on reading tasks.

	Level 1: Right There	Level 2: Putting It Together	Level 3: Making Connections
English language arts	Who is Atticus Finch in <i>To Kill a Mockingbird</i> appointed to defend?	How does Boo Radley show kindness toward Jem and Scout?	How is Atticus Finch similar to and different from the father figure in <i>Much Ado About Nothing</i> ?
Mathematics	What information is given in the problem?	What math symbols/language/equations will I need to represent the problem statement?	How do I know if my solution is reasonable?
Science	What is the rate of change of velocity over time?	What are two vector quantities included in Newton's Laws?	How is physics related to other sciences?
Social studies	When did the Berlin Wall fall?	What two events led to the end of the Cold War?	How was the Cold War different from a conventional war?

TABLE 1. Levels of Questions to Support Reading Comprehension^{29, 30}

Principle 5:

Provide intensive reading interventions to students with reading problems.

Although the expectation is that students will learn to read with understanding before advancing to middle grades, the reality is that many students reach the middle grades and are unable to read grade level text effectively and with understanding.

Students in middle grades with demonstrated reading difficulties have performed significantly better in reading when provided supplemental reading interventions that directly address their vocabulary, comprehension, and word-reading challenges.^{32, 33, 34, 35} This includes students who are English language learners experiencing difficulty beyond what is attributable to their language proficiency levels.

Practice 1: *Identify students who are two or more grade levels behind in reading and provide daily reading intervention.*

Students who have reading difficulties should be provided with approximately 50 minutes per day of supplemental reading instruction delivered by a trained professional^b who is focused on the student's instructional needs.³³ The first step in providing students with specific interventions is to identify whether the student's reading comprehension difficulties are a function of:

- Word reading or decoding problems;
- Word meaning or vocabulary problems;
- Insufficient background knowledge to understand text;
- Unusually slow or dysfluent text reading; and/or
- Inadequate use of reading comprehension strategies to promote reading comprehension.

Through diagnostic assessment, teachers can determine which of the above are contributing to reading difficulties and target their instruction.

The following is a description of an intervention that was associated with improved outcomes among students in grades 6–8.^{33, 34, 36}

^b This type of intensive reading intervention should include a research- and evidence-based intervention with a professional educator specifically trained in the instructional approach. This instruction would be based on the student's needs identified through diagnostic assessment.

PRACTICE 1 EXAMPLE APPLICATION: Phase II and III of a Reading Intervention

In Phase II of the intervention, the emphasis of instruction was vocabulary and comprehension, with additional instruction and practice provided for applying the word study and fluency skills and strategies learned in Phase I. Lessons occurred over a period of 17–18 weeks, depending on student progress. Word study and vocabulary were taught through daily review of the word study strategies learned in Phase I by applying the sounds and strategy to reading new words. Focus on word meaning was also part of word reading practice. Additionally, students were taught word relatives and parts of speech (e.g., *politics*, *politician*, *politically*). Lastly, students reviewed how to apply word study skills to spell words correctly. Vocabulary words for instruction were chosen from the text read in the fluency and comprehension component.

Teachers used similar activities three days a week during social studies lessons. Two days a week, teachers used novels with lessons developed by the research team. Fluency and comprehension were taught, with an emphasis on reading and understanding text through discourse or writing. Students spent three days a week reading and practicing comprehension of expository social studies text, and two days a week reading and practicing comprehension of narrative text in novels. Content and vocabulary needed to understand the text were taught prior to reading. Students then read the text at least twice with an emphasis on reading for understanding. During and after the second reading, comprehension questions of varying levels of complexity and abstraction were discussed. Students also received explicit instruction in generating questions of varying levels of complexity and abstraction while reading (e.g., literal questions, questions requiring students to synthesize information from text, and questions requiring students to apply background knowledge to information in text), identifying main ideas, and summarizing text. Strategies for addressing multiple choice, short answer, and essay questions were also considered.

Phase III continued the instructional emphasis on vocabulary and comprehension, with more time spent on independent student application of skills and strategies. Phase III occurred over approximately 8–10 weeks.

Principle 6:

Guide students during text-related oral and written activities that support the interpretation, analysis, and summarization of text.

Students understand, remember, and analyze text when provided with opportunities to reflect on what they read through discussions and written responses.

Practice 1: Foster discussion among small groups of students.

To encourage reading for understanding, teachers should provide opportunities for students to return to texts a number of times to explore, discuss, and revise their developing understanding of the ideas and concepts.⁷ These opportunities can be fostered through the use of reciprocal teaching, a multi-component strategy intended to support student comprehension.^{37, 38} To implement reciprocal teaching, the teacher initially leads discussion about the text until students learn to assume different roles for independently engaging in small group discussions. These roles include summarizer, questioner, clarifier, or predictor. After reading a short section of text (generally a few paragraphs at first, but increasing to several pages with practice), the *summarizer* highlights the key points for the group. Then, the *questioner* helps the group consider and talk about what was read by posing questions about anything that was unclear, puzzling, or related to other information presented. In this portion of reciprocal teaching, students could apply the question generation skills addressed in Principle 1, Practice 2 (*Instruct students to ask questions while they are reading or when listening to the teacher read to monitor comprehension and learning*) and Principle 4, Practice 1 (*Instruct students to generate questions while reading to build comprehension*) that will support asking about more than surface-level information.

The *clarifier* in the small group of students is responsible for seeking out portions of text that will help answer the questions just posed, although all members of the group participate in discussing the information and connecting ideas. By interacting in this way, students are driven back to the current selection and possibly, to other readings to look for text evidence in support of their responses. Finally, the *predictor* offers suggestions about what the group can expect to read in the next section of text. These suggestions activate relevant background knowledge, set a purpose for reading, and relate new information to that just discussed by the group.

It is important to explicitly teach each of the strategies or roles involved in reciprocal teaching before having students carry them out. Training in the procedures has led to greater reading comprehension outcomes for English language learners.³⁹

Practice 2: Instruct students in how to summarize text.

Summarizing text involves succinctly and coherently relating the main ideas and significant details of a passage. When adolescents are explicitly taught to work collaboratively on summarizing informational text, such as is done in reciprocal teaching, they reach higher levels of comprehension and retain more content information.^{27, 40, 41}

Teachers must thoroughly explain and model each step in the summarizing process multiple times with different types of text before students will be able to generate a summary in collaborative groups or, eventually, on their own. The following is an example of steps students can learn to follow to create a summary of text.⁴²

PRACTICE 2 EXAMPLE APPLICATION: Instruction in Summarizing Text

Using the following steps, students can learn to create a summary of text:

1. List all the main ideas in the passage.
 2. Underline the most important terms or phrases in the main ideas or cross out any information that is less significant.
 3. Combine related terms and phrases, and any significant details that can create a complete sentence. Repeat this step until all important information has been combined into sentences.
 4. Number the sentences in an order that will make sense and reflect the organization of the ideas in the text.
 5. Write a complete paragraph containing the sentences.
 6. Revise and/or edit the paragraph to finalize the summary.
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Practice 3: *Enhance text understanding through teacher-guided conversations.*

Structured opportunities for students to interact with their teacher and peers in discussions about texts have been found to improve content learning and reading comprehension as well as the language acquisition of English language learners.^{15, 43} One approach called, “Questioning the Author” provides students with well-scaffolded instruction that supports their interactions with texts and with other students in the class as though the author were available to them for comment and conversations.⁴⁴ This approach is different from the self-questioning practices described in Principles 1 and 4, in part because it is more narrowly focused on the clarity and organization of the message being communicated by the author. The idea is to have students actively engage with text and think about the information and the way it is written from multiple perspectives. Students ask and answer questions in a lively teacher-led discussion. The teacher provides several distinct goals for reading and several queries that facilitate students’ success in reaching these goals.

The following procedures are necessary:

1. Select an engaging text that is either narrative or expository.
2. Assure students have adequate background knowledge to understand the text.
3. Identify key ideas and concepts prior to reading to support understanding and deep thinking about text.
4. Teach students to grapple with ideas while reading and evaluate how well and thoroughly an author communicated particular ideas. Also, teach them to watch for bias or lack of representation of alternate views in the writing.
5. Have students share what they are reading through discussion but focus on understanding the text—not on the discussion per se.
6. Direct the discussion through questions such as, “What is the author trying to tell us?” and “Why do you think the author is saying that?”
7. Guide students in learning that the text is relevant but an inadequate source of all information.

It is believed that below grade-level readers are empowered by these types of interactions, because they profit not only from hearing their peers’ interpretations of text but also from observing other classmates work through issues comprehending text.⁴⁵

Principle 7:

Maximize opportunities for students to read and connect a range of texts.

Middle grades teachers have a range of readers in their classrooms, creating challenges when assignments require text reading. For this reason and possibly others, many classroom teachers require students to read very little either inside or outside of class time. Teachers also report that they increasingly rely on reading text aloud or using media, such as videos, to provide students with content knowledge because they perceive text reading as inaccessible to many students.⁴⁶ Yet for students to acquire skill in reading and understanding text, they must have opportunities to read a range of text types (e.g., textbooks, letters, descriptions, original documents, poetry). Findings of a study comparing teacher read-alouds to student silent reading of informational text suggest that students provided effective vocabulary and comprehension instruction can understand and recall content equally well when reading text silently.⁸ Teachers should consider implementing the following practices to enhance opportunities for students to read and respond to text.

Practice 1: *Provide an advanced organizer of the key ideas and key words to better prepare students to read text.*

Teachers can facilitate activation of students' background knowledge and supplement this background knowledge prior to reading. This is not the same as "front loading" where teachers tell students what they are going to read prior to reading. Activating and extending background knowledge assists students in successfully preparing to understand and learn from what they read.^{15, 21} Teachers can present (e.g., orally, on the board, or through a handout) and explain the key ideas and words, including any proper nouns, prior to reading. This will help correct any misconceptions and reduce the distraction of insignificant details. It will also help students understand

the vocabulary and focus on comprehending what they are reading. Activating and supplementing background knowledge, such as by using advanced organizers, is particularly important for English language learners and students with learning disabilities.^{22, 23}

Practice 2: *Read for a specified amount of time (e.g., 3 minutes) and then provide a prompt for student response.*

The amount of cumulative reading students do is associated with academic achievement.⁴⁷ Teachers should provide daily opportunities for students to read and respond to text for instructional purposes. The time allocated for this exercise can range from a minimum of 2 minutes for reading and 1 minute for responding, to multiple intervals of 3–4 minutes for reading and 1–2 minutes for responding.⁸ Students can be asked to respond to predetermined prompts such as, "What is the 'big idea' or main point of this section?", "How does the author describe _____?", or "What did you learn about _____?" Students can respond in writing using learning logs or orally by turning and talking with a partner for 1 minute.

Practice 3: *Have students participate in partner reading.*

Teachers can create reading partners by pairing a stronger reader and a slightly weaker reader, and then ask the pairs to take turns reading the same passage, with the better reader going first. Students can partner read for a specified amount of time (e.g., 3 minutes) and afterwards use 1–2 minutes to write about the main idea, write and answer a question, or summarize the text.³³ Repeatedly reading the text has the advantage of offering English language learners and those with reading difficulties a chance to (1) hear a peer model reading, (2) practice their own skills in reading aloud, and (3) review content multiple times to increase their understanding of new information.⁴⁸

Principle 8:

Organize students into collaborative groups for reading tasks.

Student involvement and learning can be enhanced through well-structured collaborative groups.^{41, 49} These groups can be designed to promote both individual and group accountability, and they can be used in English language arts, mathematics, social studies, and science classes. According to research, when collaborative groups are implemented two or more times per week, reading comprehension improves.²⁷

Practice 1: *Implement collaborative groups with strategic reading practices to improve student outcomes.*

Opportunities for students to collaborate with their peers can be beneficial if structured appropriately. Some teachers ask students to work initially in pairs and then move into a group; other teachers find it better to start with small cooperative groups. One example of a reading comprehension practice that uses collaborative grouping structures is Collaborative Strategic Reading (CSR) which has two important phases: Phase One, where students learn four reading comprehension strategies, and Phase Two where students work in groups to apply what they have learned.²⁷

The four reading comprehension strategies taught in the first phase include previewing text (*preview*), monitoring comprehension while reading by identifying key words and concepts that are challenging (*click*, when students understand the words; *clunk*, words students have trouble understanding), thinking about the main idea while reading and putting it into your own words (*get the gist*), and summarizing text understanding after you read (*wrap up*). Once students have developed proficiency using the four strategies with teacher guidance, they are ready to use these same strategies in peer-led cooperative learning groups.

Organizing Cooperative Groups: Experienced teachers are aware that students will not function equally well in a group and that groups are more effective when teachers carefully select students to make a well-functioning team. When implementing CSR, teachers assign approximately four students to each group with the following considerations: (1) each group should have a student who can serve as group leader, and (2) the group should consist of members with varying reading abilities. Teachers assign students to roles in the group and teach them to perform those roles. Assignment of group members rotates on a regular basis (e.g., every couple of weeks) so that students can experience a variety of roles. It is important that English language learners and students with learning disabilities be full participants and not be relegated to the easiest role all the time.⁵⁰ With appropriate support, all students can take responsibility for leading application of each of the four strategies in Collaborative Strategic Reading. Student roles help ensure that all group members have a meaningful task and participate in the group's success.

Resources for implementing this practice can be found online at the Middle School Matters Institute website:

- Collaborative Strategic Reading (CSR)
<https://greatmiddleschools.org/toolkits/reading/csr/>

What is the teacher's role when students are working in their cooperative groups? Teaching students their roles and how to implement them effectively within a cooperative group is an important first step. When students are working in their collaborative groups, the teacher's role is to circulate among the groups, listen to students' participation, read students' learning logs and, most importantly, provide clear and specific feedback to improve the use and application of the strategies. Teachers can help by actively listening to students' conversations and clarifying difficult words, encouraging students to participate, and modeling strategy usage and application.

PRACTICE 1 EXAMPLE APPLICATION: Four Roles for Students During Group Work

- 1. Leader:** Provides overall group management that includes keeping students engaged, guiding the group through the reading, and assuring strategy experts are doing their tasks and students are using their learning logs.
 - 2. Clunk Expert:** Reminds students to look for clunks as they read and use strategies to resolve clunks.
 - 3. Gist Expert:** Assures that students determine the most important “who” or “what” in the section of text they are reading and then identify key information to include in writing gists. The Gist Expert guides students to write gists with the most important information and no unnecessary details.
 - 4. Question Expert:** Helps students write and answer questions about the entire text they have read. Question Experts may use question stems (discussed in Principle 1, Practice 2) to help members of their group write successful questions.
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PRACTICE 1 EXAMPLE APPLICATION: Learning Logs

It is expected that students will need assistance learning to work in cooperative groups, implementing the strategies, and mastering academic content. One way to provide structure is through the use of learning logs.²⁷ A learning log, or written record, promotes effective implementation of cooperative groups. A learning log can be revised or developed to suit the particular focus of the classroom teacher, but typically, learning logs provide a procedure for students to record key information about each of the four strategies: preview, click and clunk, get the gist, and wrap up. They also provide written documentation of the groups' functioning for the teacher to review. An example of a learning log template is provided in Figure 4.

Sample Learning Log	
Name: _____	Date: _____
Brainstorm: What do you know about this topic?	Predict: What do you think you will learn by reading this passage?
Clunks: List your Clunks for each section you read.	
The Gist (main idea): Write a Gist for each section you read.	
Write questions: Write questions using Who, What, Where, When, Why, or How.	Review: Write a summary of the most important information you learned.

Source: Adapted from Texas Center for Reading and Language Arts. (2000).⁵¹ For use in the classroom, this figure should be expanded to fill an entire page.

FIGURE 4. Sample Learning Log

PRACTICE 1 EXAMPLE APPLICATION: Steps for Applying Cooperative Learning Groups

1. Provide students with ample opportunity to practice the four strategies (preview, click and clunk, get the gist, and wrap up) so that they are sufficiently familiar with using them and, with prompting and support, can perform them independently in their groups.
 2. Assign students to mixed ability groups with a composition of talent and personality that allows them to be functional.
 3. Assign roles to group members. Typically having four students in each group works well, with each student assigned one of these roles: leader, clunk expert, gist expert, and question expert.
 4. Before assigning students to groups and after teaching the strategies, provide a model for how the group should work by selecting students to role play in front of the class.
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Practice 2: *Implement team-based learning to clarify, apply, and extend students' understanding of text and content.*

Team-based learning (TBL) offers another means of having students work in collaborative groups.⁵⁴ To implement TBL for reading comprehension, teachers heterogeneously group four to five students to work together at least once every 10 days on a deeper examination of text. After providing explicit instruction in important words (see Principle 2, Practice 1) and building background knowledge (see Principle 3), teachers pose a complex question designed to guide students' learning of the content in a unit. For example, an American history teacher might ask, "Why were the American colonists willing to fight for their independence from the British?" Teachers lead an initial discussion about the question to prepare students to read the text and check students' understanding while they read the text.

A TBL Knowledge Application activity offers the small group of students an opportunity to return to the text after reading it to consider different perspectives, solve problems, or present conclusions.¹¹ In the American history class, students might be asked to compare two primary sources to examine Patrick Henry's and John Dickinson's perspectives on whether to separate the colonies from Britain and declare their independence. After working together to gather text evidence on the issues surrounding independence from England, the team would have to prepare a speech for the Second Continental Congress, either supporting independence or urging unity. The team would prepare arguments by using all information, readings, discussions, and activities from across the unit of instruction. Students would also prepare to address opposing arguments offered by teachers or fellow classmates.

The teacher would close the TBL Knowledge Application activity by returning to the complex question posed at the beginning of the unit and facilitating a final discussion of that question among students.

Principle 9:

Discontinue using practices that are NOT associated with improved outcomes for students.

Teachers and educational leaders are required to make daily decisions about students' learning and behavior. While educators would prefer to rely on evidence-based practice, determining what constitutes evidence-based practice can be a confusing and haphazard enterprise. Typically, educational leaders or teachers attend a conference or other educational venue and discover a new practice they hope will solve a problem. Often they are successful at promoting the implementation of this practice at the district- or school-level, resulting in professional development and other trainings to prepare teachers to implement the practice. New ideas and practices provide hope that change can benefit students. However, many of these ideas and practices are unproven and, therefore, result in false hopes for educators and disappointing outcomes for students.

Practice 1: *Take stock of all of the instructional practices and models that teachers are currently implementing and determine whether they are necessary and associated with improved outcomes for students.*

After making a list of all the reading-related practices you are using, determine if adequate evidence supports their continued use. This evidence may be derived from published studies that document effects of the specified treatment or from analyzing data in your school or district database that indicate how students are performing.

One common practice in middle grades is to attempt to assess and use learning styles as a means of enhancing outcomes, particularly for students from diverse linguistic and cultural backgrounds and students with special needs. Recent reports support considering students' individual learning needs and maximizing opportunities for all students to learn. However, the vast majority of instruments designed for educators to determine students' learning styles have no demonstrated reliability or validity.⁵² Furthermore, many of the practices recommended to enhance instruction linked to the learning styles of students have no demonstrated efficacy or clear connection to pedagogy.⁵³

The following website is a reliable place to identify evidence-based practices.

What Works Clearinghouse: <http://ies.ed.gov/ncee/wwc/>

Conclusion

The interpretation of the practical implications for the research on reading and reading interventions designed for use in the middle grades was derived from many sources and syntheses. In particular, the following syntheses were influential:

- Flynn, L. J., Zheng, X., & Lee, S. H. (2012). Instructing struggling older readers: A selective meta-analysis of intervention research. *Learning Disabilities Research & Practice*, 27, 21-32. doi:10.1111/j.1540-5826.2011.00347.x³²
- Kamil, M. L., Borman, G. D., Dole, J., Kral, C. C., Salinger, T., & Torgesen, J. (2008). *Improving adolescent literacy: Effective classroom and intervention practices: A practice guide* (NCEE 2008-4027). 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/adlit_pg_082608.pdf¹
- Wanzek, J., Vaughn, S., Scamacca, N. K., Metz, K., Murray, C. S., Roberts, G., & Danielson, L. (2013). Extensive reading interventions for students with reading difficulties after grade 3. *Review of Educational Research*, 83(2), 163-195. doi:10.3102/0034654313477212³⁵

Multiple research studies informed the principles and practices presented in this section. The level of evidence for the findings ranges from relatively low to moderately high. However, for many of the practices, the findings are proximal to the tasks taught.⁴¹ For example, research on teaching word meanings in content area classes indicates that words that are deliberately taught and practiced are more likely to be learned than when not taught; however, less is known about the overall influence of these practices on vocabulary learning more broadly.⁵⁵

There is a moderately high level of evidence for teaching students to use reading comprehension strategies while reading text.⁴¹ Less is known, however, about how many strategies are necessary and whether the use of strategies generalizes to other types of reading. It is known that providing students with more background knowledge about a topic makes them more likely to comprehend texts on the topic. However, precise methods for extending background knowledge across the range of topics students are required to read and learn is less well understood.^{15, 21, 22, 23} It is known that students who demonstrate reading difficulties in the middle grades are responsive to interventions.³³ However, these interventions may require more extensive (multiple years) and intensive (daily small groups) instruction than schools currently have the resources to support.^{34, 35} No principle has been suggested for which there are not caveats and requirements for future research. These principles are based on the best and most current research, and schools implementing them in sensible and contextually responsive ways are likely to yield benefits for student learning.

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Reading And Reading Interventions

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