

The Middle School Matters Field Guide: Reading in the Content Areas





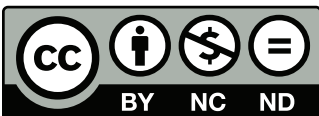
The Meadows Center
FOR PREVENTING EDUCATIONAL RISK

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Introduction

About the Field Guide

The Middle School Matters Field Guide: Reading in the Content Areas is a collection of research-based principles and practices deemed essential for middle school success. All recommendations are based on rigorous research conducted in the middle grades over the past 15 years. In addition, the field guide was designed in collaboration with middle school teachers to ensure that it is well organized, easy to use, and practical for a range of educators.

The field guide is designed to help educators learn about proven practices and incorporate them into their classrooms. These practices can be used with all state standards and curricula and across any content area, including science and social studies, in grades 5 to 9. The practices are beneficial for all students but especially for those who require supplemental instructional support, such as English learners (ELs).



A Focus on Schoolwide Literacy

The reading practices in this guide are intended to be implemented schoolwide as part of a school culture that fosters high levels of student achievement. These practices will benefit all learners but are especially useful in supporting students who struggle with reading, as well as students who are ELs. 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.

Why Reading?

In middle school, reading is necessary in all content areas, so students benefit when every teacher is a reading teacher. In addition, educational standards emphasize effective reading practices as part of content learning (i.e., disciplinary literacy).

There is a strong research base for the use of reading supports in the content areas in the middle grades. Extensive research studies and numerous syntheses have examined reading instruction and intervention for middle grades students. As a result, the Institute of Education Sciences has issued a guidance document to assist schools in making research- and evidence-based decisions to improve instruction for adolescents with reading difficulties.¹ This field guide uses this extant research and data to provide an overview of four guiding principles (see Table 1) for improving reading achievement for all students.



What About Writing?

Mounting evidence demonstrates the importance of connecting reading and writing in content area classrooms.² As teachers incorporate writing into text-based activities, students improve their reading comprehension.¹ For example, teachers can ask students to write reactions after reading text, require written responses to questions, guide students in taking notes during class, write summaries as units conclude, and use daily journal writing to document how concepts are building throughout a unit. Although this field guide focuses on reading in the content areas, many of the recommended practices and strategies also include a writing component. These types of practices are identified by a pencil icon ✎ used throughout this field guide.

Research-Based Principles and Practices

This field guide highlights four broad reading principles and describes more specific instructional practices within each principle. Examples of evidence-based strategies, research citations, illustrations, and links to implementation resources are included throughout the guide.

Table 1. Principles and Practices

<p>PRINCIPLE 1</p> <hr/> <p><i>School leadership promotes and supports a schoolwide focus on reading across all content areas.</i></p>	<ul style="list-style-type: none"> • Practice 1: Establish and support the expectation that all teachers implement key reading practices across all grades and content areas. • Practice 2: Provide ongoing and deep professional development to support schoolwide implementation of reading practices. • Practice 3: Establish and support systematic reading interventions for students with reading difficulties. • Practice 4: Guide teachers to discontinue using literacy practices that are not associated with improved student outcomes.
<p>PRINCIPLE 2</p> <hr/> <p><i>All teachers help students use text to support content area learning.</i></p>	<ul style="list-style-type: none"> • Practice 1: Activate students' background knowledge by previewing text and using an advance organizer. • Practice 2: Ask students to read daily from content area text and provide an oral or written response. • Practice 3: Teach students to cite text-based evidence to support their answers to oral and written questions. • Practice 4: Use collaborative groups as opportunities for students to read, discuss, and learn from text. • Practice 5: Provide teacher-guided discussion to enhance text understanding.
<p>PRINCIPLE 3</p> <hr/> <p><i>All teachers provide vocabulary instruction to enhance content area learning.</i></p>	<ul style="list-style-type: none"> • Practice 1: Provide explicit instruction of key academic vocabulary words, ensuring that students have multiple opportunities to read and write words and apply them in context over time. • Practice 2: Teach word-learning strategies so students can independently interpret the meanings of unknown words.
<p>PRINCIPLE 4</p> <hr/> <p><i>All teachers provide instruction and support for using reading comprehension strategies.</i></p>	<ul style="list-style-type: none"> • Practice 1: Teach students to generate and answer different types of questions while reading. • Practice 2: Teach students to generate main ideas at regular intervals in a text. • Practice 3: Teach students strategies for summarizing text after reading. • Practice 4: Teach students to connect ideas within and between texts using graphic organizers. • Practice 5: Teach students to make inferences by connecting key ideas within and across texts and using background knowledge.

Principle 1: School leadership promotes and supports a schoolwide focus on reading across all content areas.



Critical to successful schoolwide implementation of reading practices is strong and focused school leadership. Extensive research supports school principals and leadership teams guiding and supporting the use of evidence-based practices.^{3, 4} To significantly improve student achievement, teachers must take part in professional development that “is ongoing, intensive, and connected to practice and school initiatives; focuses on the teaching and learning of specific academic content; and builds strong working relationships among teachers.”⁵ Effective leadership includes ongoing support that allows teachers to examine classroom data, curriculum demands, and current instructional practices and use this information in collaborative planning.⁶

School leadership teams promote coherence and sustainability by providing teachers with the needed supports as they work to adapt current practices and integrate new practices that align with the schoolwide focus on content literacy. Ongoing and embedded support enriches teacher learning and student achievement.⁷



Practice 1

Establish and support the expectation that all teachers implement key reading practices across all grades and content areas.

School leadership teams and administrators play a key role in setting the expectation that **all** content area teachers are also literacy teachers. Setting clear expectations for implementation of reading practices schoolwide promotes a coherent instructional approach, leading to improved student achievement.

In middle school content area classrooms, the literacy skills of reading, writing, listening, and speaking develop simultaneously with content knowledge. As teachers implement key content reading practices across content areas, students become adept at applying effective literacy skills within academic disciplines. Effective school leadership teams maintain the focus on schoolwide literacy instruction by establishing mechanisms for contextualized teacher learning and ongoing refinement of practices.



Practice 2

Provide ongoing and deep professional development to support schoolwide implementation of reading practices.

Maintaining and strengthening a schoolwide focus on effective content area reading practices requires ongoing and deep professional development. An important aspect of teacher professional development is ongoing and embedded support for implementation that is situated in the school context and is specific to content area learning. Successful school leaders ensure continuous teacher learning and development through embedded professional development opportunities, such as in-class strategy demonstrations, observations and feedback regarding key reading practices, collaborative lesson planning, and schoolwide strategic planning. School leaders also use classroom data and observations to identify areas for further teacher support and mobilize resources to ensure teacher participation and follow-through.

Helpful Resources

- **Strategic Planning Process**

School leaders can use the self-assessment tool to identify areas for professional development and develop a plan for teacher support.

greatmiddleschools.org/spp/

- **Coaching Form: Reading Throughout the Content Areas**

Instructional coaches can use this tool to collect classroom observation data and conduct feedback meetings.

greatmiddleschools.org/wp-content/uploads/2020/06/MSMI_Fidelity_Reading_Interactive_R.pdf

Practice 3

Establish and support systematic reading interventions for students with reading difficulties.

This practice specifically refers to students who are not reading on grade level. Although the expectation is that students will learn to read with understanding before advancing to the middle grades, the reality is that many students reach the middle grades unable to read and comprehend grade-level text. Effective school leaders support the use of proactive reading intervention procedures that include systematically identifying students who need intervention, providing targeted reading skill instruction, monitoring progress, and making appropriate decisions regarding continuing or exiting students from intervention.

Students in the middle grades with demonstrated reading difficulties have performed significantly better when provided supplemental interventions that directly address their vocabulary, comprehension, and word-reading challenges.^{8, 9, 10, 11, 12} This finding also is true for ELs experiencing difficulty beyond what is attributable to their language proficiency levels.



Identifying Students

Middle schools need easy-to-manage and reliable screening tools to accurately identify students who require reading intervention.¹³ This screening may include existing data from grade-level, schoolwide reading assessments—if the assessments accurately identify students significantly lagging in reading skills. If no existing tools are available, school leaders should identify easy-to-manage screening assessments with established reliability in identifying reading difficulties. Numerous tools are available at low or no cost. See the Center on Response to Intervention for information on universal screening tools appropriate for the middle grades: rti4success.org/resources/tools-charts

Providing Targeted Intervention

Effective school leaders support reading intervention by facilitating logistics such as scheduling, staffing, and resources for intervention programs. In middle schools, several considerations support effective interventions, including the following:

- Highly trained personnel who understand reading instruction
- Well organized intervention classes that do not interfere with core classes
- Use of highly specified, research-based intervention
- Use of assessments to appropriately group students and monitor their progress

Using Progress-Monitoring Assessment

School leadership teams should periodically review progress-monitoring data for students receiving intervention to ensure that they are making adequate progress toward reading goals. Numerous progress-monitoring tools are available that are suitable for middle school reading intervention. Progress-monitoring data assist intervention teachers in adjusting instruction and provide students with meaningful information about their own efforts. See the National Center on Intensive Intervention for more information on progress monitoring: intensiveintervention.org

Helpful Resource

- **Essential Characteristics of Reading Instruction and Interventions in Middle School**
texasldcenter.org/files/projects/Summary_P3.pdf

Research-Based Middle School Interventions

- **Reading Instruction for Middle School Students: Developing Lessons for Improving Comprehension**
texasldcenter.org/lesson-plans/detail/reading-instruction-for-middle-school-students-developing-lessons-for-impro
- **Reading Intervention Novel Units and Lesson Plans**
 - Lessons for Improving Comprehension Through *Any Small Goodness* by Tony Johnston
texasldcenter.org/lesson-plans/detail/any-small-goodness
 - Lessons for Improving Comprehension Through *Iqbal* by Francesco D’Adamo
texasldcenter.org/lesson-plans/detail/iqbal

Practice 4

Guide teachers to discontinue using literacy practices that are not associated with improved student outcomes.

Effective school leaders help to determine whether current instructional practices are associated with improved outcomes for students—whether adequate evidence supports their continued use. This evidence may be derived from reviewing 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.

For example, a common practice in the middle grades is to assess and use learning styles to enhance 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, **instruments to determine students' learning styles have not adequately demonstrated reliability or validity**.¹⁴ Furthermore, many of the recommended practices linked to students' learning styles have inadequately demonstrated efficacy or a clear connection to pedagogy.¹⁵

Helpful Resource

- **10 Key Reading Practices for All Middle and High Schools**
meadowscenter.org/files/resources/10Keys_Secondary_Web.pdf

Organizations That Identify Research-Based Practices

- **Best Evidence Encyclopedia**
bestevidence.org
- **IRIS Center**
iris.peabody.vanderbilt.edu/ebp_summaries
- **What Works Clearinghouse**
ies.ed.gov/ncee/wwc

Websites for Research-Based Resources

- **Doing What Works Library**
dwwlibrary.wested.org
- **IRIS Center Resource Library**
iris.peabody.vanderbilt.edu/iris-resource-locator
- **The Meadows Center for Preventing Educational Risk**
meadowscenter.org

Principle 2: All teachers help students use text to support content area learning.



Middle grades teachers have a range of readers in their classrooms, creating challenges when assignments require students to read conceptually dense texts. For this reason, many classroom teachers require students to read little either inside or outside of class time. Teachers 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.¹⁶ Yet for students to achieve at high levels, they must have opportunities to read a range of text types (e.g., textbooks, letters, descriptions, original documents, poetry). The following practices enhance students' opportunities to read and respond to text.

Practice 1

Activate students' background knowledge by previewing text and using an advance organizer.

Students' background knowledge has a positive impact on reading comprehension, especially with text that is complex and conceptually dense.^{17, 18} Insufficient background knowledge negatively affects comprehension, especially for students with reading difficulties and ELs.^{19, 20} Teachers often informally activate students' background knowledge by posing questions about the topic, but **two simple steps will engage students more deeply in connecting background knowledge with text before launching into a lesson: previewing text and providing an advance organizer.**

Recommendation

Preview the text.

Before reading a passage, teachers guide students through a preview of the text.²¹ Students should read and think about the headings and subheadings that delineate sections or topics. For each heading, students should ask themselves what they already know about the topic and what they will learn. Teachers guide students to examine other features of the text, including pictures, tables, or graphics; highlighted key ideas or terminology; and special features (e.g., a special interest story or sidebar).

Recommendation

Provide an advance organizer.

The term "advance organizer" refers to showing students what they will learn in the upcoming lesson. An effective advance organizer includes the key ideas and vocabulary students will encounter in the day's lesson. There are several tangible ways to provide an advance organizer, including the following:

- Post an agenda for the unit and each lesson (see Figure A)
- Provide an outline of key ideas
- Use a graphic organizer to show topics and how they relate (see Figure B)
- Introduce essential words (see Principle 3, Practice 1 for more information)

Examples of Advance Organizers

Figure A. Example Agenda and Outline of Key Ideas

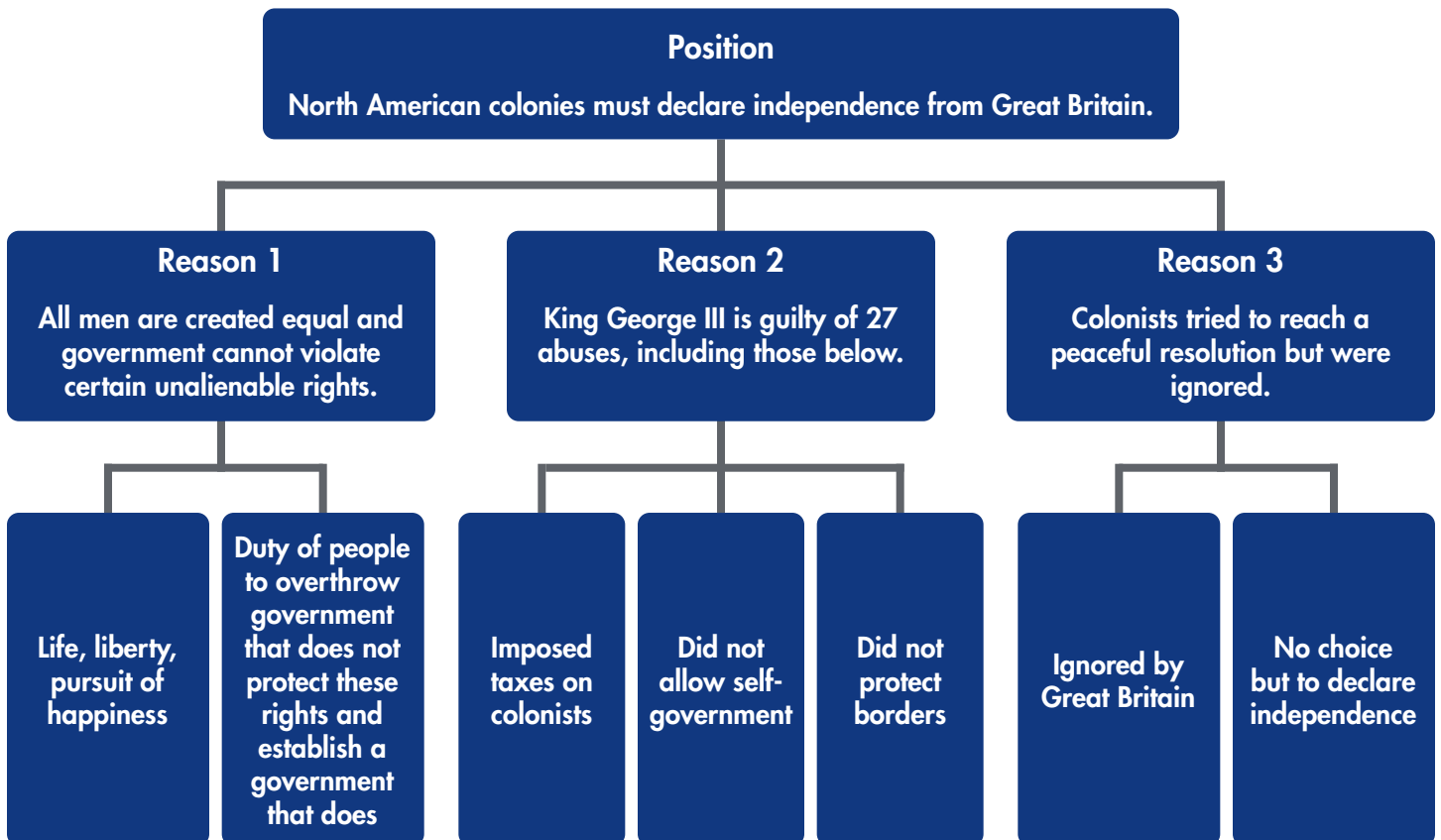
Our Unit: The American Revolution

Unit Objective: By the end of this unit, I will be able to describe how the colonists won the Revolutionary War.

Today: The Declaration of Independence. By the end of the day, I will be able to

- explain why the colonists felt they must declare independence and
- describe how the Declaration helped the colonists win the Revolutionary War.

Figure B. Position-Reason Graphic Organizer Previewing Topics in the Declaration of Independence



Practice 2

Ask students to read daily from content area text and provide an oral or written response.

The amount of in-class reading that occurs in middle school varies considerably by teacher.¹⁶ However, with sufficient vocabulary and comprehension support, students benefit from **reading widely, reading daily, and writing about what they read.**²² Cumulative reading time is associated with academic achievement.²³

Recommendation

Establish daily opportunities for students to read with a prompt for providing a written response. This practice could be a daily “quick read” as part of a lesson.²⁴

Recommended Routine

1. Students read a brief passage or excerpt.
2. The teacher provides a prompt and asks students to discuss for 2 to 3 minutes.
3. The teacher gives 1 minute for writing a response to the prompt.
4. Repeat the process in multiple intervals, with responses building to full understanding of the key idea.

Quick-Read Writing Prompt Ideas

- What is the big idea, or main point of this section?
- How does the author describe _____?
- What did you learn about _____?

Alternative formats include students responding in a learning log or orally by turning and talking with a partner for 1 minute.

Practice 3

Teach students to cite text-based evidence to support their answers to oral and written questions.

Competent readers simultaneously extract and construct meaning during content area reading.²⁵ This process requires careful reading of text and using evidence from the text to support arguments. Citing text-based evidence as part of close reading of text supports students' cognitive engagement in content learning as they activate their background knowledge and connect ideas. In this way, students build on background knowledge to construct deeper and more complex understanding of concepts.²⁶ Activities requiring students to find and use text-based evidence are most effective when used frequently and consistently within engaging and interactive classroom discourse.^{27, 28}

Example

Students cite text evidence during content area reading assignments.

Teachers can follow this routine:

1. Create and distribute questions that can be answered with evidence from the text.
2. Activate students' background knowledge in preparation for reading.
3. Ask students to read and highlight or mark with sticky notes places in the text that provide evidence regarding the questions.
4. Individually or within groups, ask students to review their evidence and make an argument in response to the question. Students should be prepared to discuss their arguments and evidence.

Note: *Students are also asked to cite text evidence when using the question-writing strategy (see Principle 4, Practice 1).*

Practice 4

Use collaborative groups as opportunities for students to read, discuss, and learn from text.

Student engagement and academic learning are enhanced through well-structured groupings for collaborative work.^{27, 29} When teachers implement collaborative groups two or more times per week, reading comprehension improves.²¹ There are various options for engaging students in collaborative groupings in content area classrooms; **the key point is for students to use and discuss reading and writing as part of the assigned task.**

Two strategies that use collaborative groupings are described below—collaborative strategic reading (CSR) and team-based learning (TBL).

Collaborative Strategic Reading

CSR is a system of strategies to improve students' reading comprehension skills. Groups of students (approximately four to a group) apply four key comprehension strategies while reading an assigned content area text. Each student assumes a specific role, which helps all group members have a meaningful task and participate.

CSR Strategies

Preview: Students implement this strategy *before reading* the day's text. Previewing helps students activate background knowledge and make informed predictions about what they will learn from the text.

Click and clunk: This comprehension monitoring strategy is used *during reading*. As students read the passage paragraph by paragraph, they identify key words and concepts that are easy to understand ("clicks") and those that are challenging or confusing ("clunks").

Then, working together, the group uses the following **fix-up strategies** in progressive order to restore comprehension. The strategies progress from least disruptive to reading the passage to most. After each strategy, the group asks, "Does this make sense now?"

1. Reread the sentence with the clunk.
2. Reread the sentences before and after the clunk.
3. Look for a prefix or suffix that would help.
4. Break apart the word and look for any smaller words that you know.





Get the gist: Students use this strategy with single paragraphs to generate a main idea statement. First, students identify the “who” or “what” the paragraph is about. Second, they identify the most important information about the “who” or “what.” Third, they generate a succinct main idea sentence in about 10 words that includes the essential information. (For more information, see Principle 4, Practice 2.)

Wrap-up: The group generates questions (*who, what, when, where, why, how*) to check their understanding of the passage. Each student writes a summary in their learning log or notebook.

CSR Roles

Teachers assign students so that each group includes varying reading abilities. Teachers teach students the particulars of each role, using cue cards that outline the responsibilities.

Leader: Provides overall group management, including keeping students engaged, guiding the group through the reading, and ensuring that teammates do their tasks and use their learning logs

Clunk expert: Reminds students to look for clunks as they read and use strategies to resolve clunks

Gist expert: Ensures that students determine the most important “who” or “what” in text, identify key information to include in gists, and write gists with the most important information and no unnecessary details

Question expert: Helps students write and answer questions about the entire text—may use question stems to help group members write successful questions

Students rotate through each role every week or 2 weeks. It is important that ELs and students with learning disabilities be full participants and not be relegated to the easiest role every time.³⁰ With appropriate support, all students can take responsibility for applying the four strategies.



Learning Logs

Students will need assistance in learning to work in cooperative groups, implementing the strategies, and mastering academic content. One way to provide structure is through learning logs.²⁹ 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 strategies. Learning logs also provide written documentation of the groups' functioning for the teacher to review. An example of a learning log template is provided in Figure C.

Figure C. Learning Log Template

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.



Tips for CSR Groups

- Provide sufficient practice so that students are familiar with using the strategies (preview, click and clunk, get the gist, and wrap-up) and, with prompting and support, can perform them independently in their groups.
- Before assigning students to groups, provide a model for how groups should work by selecting students to role play in front of the class.
- Assign students to mixed-ability groups with a thoughtful combination of talent and personality.

Helpful Resource

CSR Toolkit

Includes online learning modules, classroom videos, and instructional tools—like the student role cards, clunk cards, and learning log

greatmiddleschools.org/toolkits/reading/csr



Team-Based Learning

TBL uses structured small groups that allow students to apply newly learned information from text.³¹ TBL provides several benefits, including the following:

- Requiring students to justify their answers or opinions using information from the text
- Encouraging learners to move beyond recall of simple facts to application of information and key concepts to solve problems
- Promoting active student learning
- Increasing depth of knowledge and understanding of key concepts

TBL structures opportunities for teams of students to discuss text-based content with peers as they think critically and consider various perspectives to answer quiz questions and solve problems or challenges assigned by the teacher. During these activities, students are required to cite textual evidence to justify answers.

How to Use TBL for Reading Comprehension

Teachers assign heterogeneous teams of four to five students. After providing explicit instruction of essential words and activating background knowledge, teachers pose a focus question to guide students' thinking about a key concept while they read (e.g., "Why were the American colonists willing to fight for their independence from the British?"). Teachers lead an initial discussion about the question to launch student groups into reading the text and check students' understanding while they read the text.

After Reading: TBL Knowledge Application Activities

In TBL knowledge application activities, student teams return to the text after reading to consider different perspectives, solve problems, or present conclusions.^{31, 32} Teachers design an application activity that engages students in rereading text as part of a culminating activity.

Example

TBL knowledge application activity

1. Students move into the predetermined teams (four to five students).
2. The teacher provides instructions, models the activity, and distributes materials.

Activity: As a team, select one colonial region to live in. Pick four characteristics that best represent your region and rank them in importance.

3. As students work, the teacher circulates around the classroom, answers students' questions, and facilitates team discussions and the use of text evidence to support answers.
4. After teams complete their activity, decisions are shared with the rest of the class. The teacher leads a discussion of the differences between team answers by asking questions such as "Why did your team choose this region?" or "What do you have to say to this team, which ranked the same characteristics in a different order?" Students must be prepared to justify their answers using evidence from text.
5. To close the activity, the teacher may ask students to summarize information, answer final questions, or review major unit themes.

Helpful Resources

- **TBL Collaborative website**
teambasedlearning.org
- **TBL knowledge application video**
vimeo.com/201866773/77745e97b0



Practice 5

Provide teacher-guided discussion to enhance text understanding.

Teacher-guided discussions are structured opportunities for students to discuss texts. This strategy improves content learning, reading comprehension, and, for ELs, acquisition of English.^{33, 34} One approach, **questioning the author**, scaffolds students' interactions with text and helps them think about the author's intention. Students engage in discussion as though the author were available to them for comment and conversations.^{35, 36} The key idea is for students to actively engage with the text and think about the way it is written from multiple perspectives.

Tips for Teacher-Guided Discussions

1. Model the process of posing a question for the author, examining the text for clues, and answering the question from the author's perspective.
2. Through guided discussion, ask students to contribute questions for the author. Select questions about the author's intent and message for discussion.
3. Provide opportunities for students to question the author and examine evidence in the text to address the questions.

Principle 3: All teachers provide vocabulary instruction to enhance content area learning.



Middle school students' knowledge of general academic terms used across the content areas has been linked to academic achievement,³⁷ but those terms are only part of what students need to know to be successful. Each content area (e.g., mathematics, science, social studies, English language arts) has a set of unique vocabulary terms,³⁸ and students need to learn what these words mean and how to use them in speaking and writing within the academic disciplines. Reviews of research on academic vocabulary instruction have found that two main practices are effective: **explicit instruction in important words** and **instruction in word learning strategies**.^{39, 40}

Practice 1

Provide explicit instruction of key academic vocabulary words, ensuring that students have multiple opportunities to read and write words and apply them in context over time.

Explicitly teaching important vocabulary words has multiple benefits for students. It expands students' academic vocabulary knowledge, increases their background knowledge, and contributes significantly to their learning of content. It also makes students "word conscious," developing their awareness of new words and the importance of building a rich lexicon of vocabulary.³⁸ As students read and write about the concepts and ideas taught, they deepen their understanding of vocabulary through multiple exposures to words and meanings.

There are several ways to deepen students' understanding of important vocabulary words. Teachers can introduce words using the essential words routine, described below, and then follow up with activities that require students to use the words in speaking and writing.

Essential Words Routine

The essential words routine can be used in all content area classes before beginning a new unit of study or reading a new passage. The instructional routine takes about 5 minutes per word with a general recommendation of teaching two to five words at a time. Through the routine, students gain a first exposure to the word, which provides some background knowledge and prepares them for learning additional content in a unit.

Steps

Step 1: Select the words most essential for students to know for the unit or passage they are about to read.

Careful word selection is essential. Teachers should identify key words that are high priority, high utility (i.e., words that students are likely to encounter across contexts), and essential to comprehending the topic. The point is to deepen and broaden students' vocabulary knowledge while also teaching key concepts.

Step 2: Prepare a graphic organizer, called a "vocabulary map," for each word.

See Figure D for an example.

Step 3: Show the vocabulary map to students and use it as a guide to present important information about each word.



Figure D. Vocabulary Map Example

oppose (oponense a)	
to be against something	
Synonyms: resist, stand against, disagree	
Example Sentences	Turn and Talk
<ol style="list-style-type: none">1. The voters opposed the bill that would decrease the speed limit on the highway.2. Civil rights activists showed their opposition to segregation by participating in peaceful protests.	<ol style="list-style-type: none">1. What is one school rule that you oppose?2. When two people are in opposition, what are some ways they can work it out?

<https://greatmiddleschools.org/toolkits/reading/vocabulary-maps/>

Helpful Resource

Toolkit: How to Teach Essential Words

Includes professional development, strategy guides for each content area, and instructional materials
greatmiddleschools.org/words

Additional Activities to Deepen Students' Understanding

It is important that teachers return to words taught explicitly throughout a lesson and instructional unit to ensure that students have a deep understanding of the words and can correctly use them in speaking and writing tasks. Teachers should also periodically review words that were previously taught.

The following strategies extend the vocabulary learning of all students and are particularly helpful to students learning English.⁴⁰ However, teachers need to be aware that students who are not yet proficient in English need additional help to master academic vocabulary that may be familiar to native English speakers (*e.g., compare, analyze*).

Frayer Model

This type of graphic organizer builds vocabulary and conceptual knowledge across content areas.^{40, 41} The strategy requires students (not the teacher) to define a vocabulary word and then process the word by outlining its characteristics, examples, and nonexamples. This activity can be done in collaborative groups while the teacher circulates around the classroom and assists students. See Figure E for an example.

Helpful Resource

Toolkit: Frayer Model

Includes professional development, videos, and instructional materials

greatmiddleschools.org/frayermodel

Figure E. Frayer Model Example

<p>Definition</p> <p>A novel set in the past that references significant events in history; the writer may blend factual information with fictional characters, dialogue, details, and events</p>	<p>Characteristics</p> <ul style="list-style-type: none"> ● Based on historical fact ● Set in the past ● Set in a real time and place ● Includes some fictional aspects, such as characters, details, or events
<p>historical fiction</p>	
<p>Examples</p> <ul style="list-style-type: none"> ● Novel about the Civil War ● Story about a fictional family during the Great Depression ● <i>Esperanza Rising</i> by Pam Muñoz Ryan ● <i>Number the Stars</i> by Lois Lowry 	<p>Nonexamples</p> <ul style="list-style-type: none"> ● A general's account of events leading to the Iraq War ● A story about a family that lives on the moon ● <i>The Lord of the Rings</i> by J.R.R. Tolkien ● <i>Tuck Everlasting</i> by Natalie Babbitt

Writing Prompts

Teachers can structure opportunities for students to use key words in written and oral arguments for a debate or a structured discussion.^{18, 42} See Figure F for an example.

Figure F. Writing Prompt Example

Main Idea Ecosystems have varied forms of life that interact and support one another.
Teacher Prompt Choose an ecosystem (freshwater, marine, desert, forest, grassland, or tundra) and write a paragraph describing the relationships of its living organisms. Use each of the key words in your paragraph. Start your paragraph with the main idea of our unit.
Key Words biodiversity, relationship, species, energy, producers, consumers, decomposers
Sample Response From Student Ecosystems have varied forms of life that interact and support one another. As an example, the freshwater ecosystem has biodiversity , with many species of plants, insects, amphibians, reptiles, fish, birds, and mammals. The relationship between the sun, plants, and animals is important for supporting life. The sun provides energy for primary producers (algae and plants) to grow. These plants provide oxygen through photosynthesis and food for small animals (primary consumers). Small animals provide food for the larger animals (secondary and tertiary consumers). Finally, when plants and animals die, decomposers change them into important nutrients and chemicals that support healthy plant growth.

Practice 2

Teach word-learning strategies so students can independently interpret the meanings of unknown words.

Explicit instruction of essential words is important (Practice 1), but it is impossible to directly teach all the unfamiliar words students will encounter in academic learning. Students must develop strategies for approaching unfamiliar vocabulary on their own.⁴³

An evidence-based approach is to teach morphemes (prefixes, roots, and suffixes) and how they contribute to the meaning of words.^{37, 42} Students' awareness of morphemes is directly related to their vocabulary knowledge and reading comprehension.^{43, 44} Research highlights the importance of having multiple opportunities to practice using morphemes, especially for ELs.⁴⁰

The following are the basic steps of incorporating morphemic analysis into content area instruction:

1. Identify and teach one or more key words with a root that can be modified by different prefixes and suffixes (e.g., *graph*, meaning "to write"). See Figure G.
2. Show how adding prefixes and suffixes changes the meaning of related words (e.g., *graphic*, *demographic*, *autographic*).
3. Provide opportunities for students to read, write, and say the words in meaningful contexts within and beyond the lesson.

Figure G. Morpheme Examples Across Content Areas

Root word: circu(m)

Definition: 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

Principle 4: All teachers provide instruction and support for using reading comprehension strategies.



Strong reading comprehension is essential to content learning for middle school students.⁴² Evidence shows that when content area teachers explicitly teach and reinforce their students' use of comprehension strategies, academic learning improves.^{18, 42} Though comprehension instruction occurs in elementary school, many middle school students have inadequate comprehension skills to independently read and understand content area texts used in middle school. Content area text tends to be complex, requiring strategies to derive meaning from the text. Without comprehension instruction and sufficient practice, adolescents tend to proceed through text with insufficient understanding of what they are reading or awareness of when comprehension breaks down.^{45, 46}



Practice 1

Teach students to generate and answer different types of questions while reading.

Teaching students to generate questions while reading is one way for students to stop at regular intervals to think about what the author is communicating 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.^{21, 33, 47}

One method is to teach students to generate the following types of questions to support their comprehension:

- **Specific questions** are the most literal and are based on a specific fact in the text. Answers to specific questions can be found word-for-word from one place in the text.
- **Wide questions** require students to make inferences by combining information from different places in the text, across multiple texts, or from prior knowledge and the text. Answers to wide questions typically require one or more sentences.

Table 2 shows some examples of specific and wide questions.

For both question types, students cite evidence from the text to support their answers. Citing evidence ensures that students look back at the text while they generate their answers and not simply guess.



Table 2. Examples of Specific and Wide Questions to Support Reading Comprehension

	Specific Questions	Wide Questions
English language arts	<ul style="list-style-type: none"> • Why did Annemarie’s parents burn their newspaper? • What items were being rationed? <p><i>From “Number the Stars” by Lois Lowry</i></p>	<ul style="list-style-type: none"> • How does the setting in chapters 7 and 8 contrast with the city setting of previous chapters? • Describe the different ways the war has affected the people of Denmark. <p><i>From “Number the Stars” by Lois Lowry</i></p>
Science	<ul style="list-style-type: none"> • How thick is the Earth’s mantle? • What is the largest ocean? 	<ul style="list-style-type: none"> • What are some of the dangers associated with earthquakes? • Why are oil and natural gas nonrenewable resources?
Social studies	<ul style="list-style-type: none"> • How many original colonies were there? • What famous protest did the Sons of Liberty organize in Boston? 	<ul style="list-style-type: none"> • Describe what life was like in Jamestown in 1612. • How was the experience of the Jamestown colonists different from what they expected?

Helpful Resource

Toolkit: How to Use Question Writing to Build Comprehension

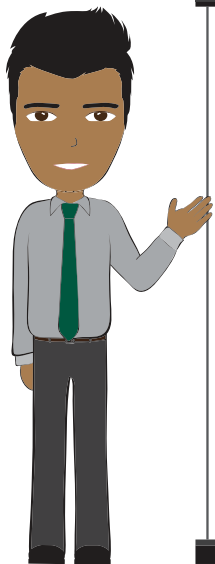
Includes professional development, strategy guides for each content area, and instructional materials
greatmiddleschools.org/questions

Practice 2

Teach students to generate main ideas at regular intervals in a text.

To foster active and engaged reading, teachers can teach students how to generate main idea statements. Generating main ideas helps students make connections to previous learning and across sections of text.⁴⁸ Adolescents who learn to generate the explicitly or implicitly stated main ideas of a text demonstrate increased understanding and recall of important information.⁸ In a strategy known as paragraph shrinking⁴⁸ or get the gist,^{21, 49} students use a simple, three-step process to generate the main idea after a section of text.

Figure H. Get the Gist Steps



How is it done?

During
Reading



Step 1: Who or what is this section about?

Step 2: What is the most important information about the “who” or “what”?

Step 3: Write a **gist statement** that combines the information from steps 1 and 2. (The gist should be in students’ own words, rather than a sentence copied from the text.)

Figure I. Get the Gist Example

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Lewis and Clark: American Explorers

By Barbara Radner

2005

The Lewis and Clark Expedition, also known as the Corps of Discovery Expedition, was the first effort by Americans to explore what is now the western United States. President Thomas Jefferson had just completed the Louisiana Purchase in 1803, in which the United States bought a great deal of land from the French. He wanted American travelers to map and characterize the newly acquired territory and establish an American presence there. As you read, identify the difficulties that Lewis and Clark faced on their journey, and how they overcame them.

More than 200 years ago, in 1804, two explorers made an important journey. They were named Meriwether Lewis and William Clark.¹ Today, people know a lot about the places they visited, but 200 years ago there were no maps of that part of the United States. They would travel by boat most of the way and they would make the first maps of that part of our country. They were going to trace where a great river went. The river they were mapping is a very big one called the Missouri River.² They wanted to find out where it went. They hoped it would take them to the ocean.



"3113 Lewis and Clark with Sacagawea" by Bill McChesney is licensed under CC BY 2.0.

STOP AND GET THE GIST OF SECTION 1

1. Lewis and Clark were friends and officers in the army. The two men were accompanied by a group of U.S. Army volunteers.
2. The Missouri River is the longest river in North America. It runs through Montana, North Dakota, South Dakota, Nebraska, Iowa, Kansas, and Missouri.

Teacher-Prepared Gist Statement

Section	Step 1: Who or what is this section about?	Step 2: What is the most important information about the "who" or "what"?	Step 3: Write gist statement.
I	Lewis and Clark	Made the first maps of the Missouri River	Lewis and Clark made the first maps of the Missouri River.

Helpful Resource

Toolkit: How to Teach Students to Get the Gist

Includes professional development, strategy guides for each content area, and instructional materials

greatmiddleschools.org/gist



Practice 3

Teach students strategies for summarizing text after reading.

Summarizing a passage involves relating the main ideas and significant details in a succinct and coherent synopsis. Summarizing works well with Practice 2, generating main idea statements for each section of text. In summarizing, students generate a statement that encompasses the main ideas throughout the passage. Teachers must thoroughly explain and model each step in the summarizing process multiple times with different types of text before students are able to generate a summary in collaborative groups or, eventually, on their own. When adolescents are explicitly taught to work collaboratively on summarizing informational text, such as in a reciprocal teaching routine, they reach higher levels of comprehension and retain more content information.^{21, 27, 50}

The following is an example of steps students can learn to follow to create a summary of text.⁵¹



Six Steps to Summarization

Step 1: LIST the main ideas for each paragraph in the passage. (Students can use previously written gist statements.)

Step 2: UNDERLINE the most important main ideas in your list.

Step 3: COMBINE any ideas that could go into one sentence.

Step 4: NUMBER the ideas in a logical order.

Step 5: WRITE your summary in one paragraph.

Step 6: EDIT your summary.

Figure J. Example Summary Using the Six Steps to Summarization

From "What Are Clouds," available at nasa.gov/audience/forstudents/5-8/features/nasa-knows/what-are-clouds-58.html

Step 1: List the main ideas for each section in the passage.

Main idea 1: Clouds form when water vapor rises, cools, and sticks to particles in the air.

Main idea 2: Clouds are named based on their location in the sky and their shape.

Main idea 3: Rain is caused when water droplets join together, get heavy, and fall to Earth.

Main idea 4: NASA studies clouds to help understand Earth's weather.

Step 2: Underline the most important main ideas in your list.

Main idea 1: Clouds form when water vapor rises, cools, and sticks to particles in the air.

Main idea 2: Clouds are named based on their location in the sky and their shape.

Main idea 3: Rain is caused when water droplets join together, get heavy, and fall to Earth.

Main idea 4: NASA studies clouds to help understand Earth's weather.

Step 3: Combine any ideas that could go into one sentence.

(Not necessary/applicable for this passage)

Step 4: Number the ideas in a logical order.

1. NASA studies clouds to help understand Earth's weather.

2. Clouds are named based on their location in the sky and their shape.

3. Clouds form when water vapor rises, cools, and sticks to particles in the air.

4. Rain is caused when water droplets join together, get heavy, and fall to Earth.

Step 5: Write your summary in one paragraph.

NASA studies clouds to help understand Earth's weather. Clouds are named based on their location in the sky and their shape. Clouds form when water vapor rises, cools, and sticks to particles in the air. Rain is caused when water droplets join together, get heavy, and fall to Earth.

Step 6: Edit your summary.

Clouds are important because they help us understand Earth's weather. They are named based on their location in the sky and their shape. Clouds form when water vapor rises, cools, and sticks to particles in the air. When the water droplets join together, they get heavy and fall to Earth as rain.

Helpful Resource

Toolkit: Summarization for Comprehension

Includes professional development, strategy guides for each content area, and instructional materials
greatmiddleschools.org/summarization

Practice 4

Teach students to connect ideas within and between texts using graphic organizers.

Graphic organizers have been associated with improved vocabulary knowledge and comprehension, particularly when used with informational text.^{31, 52, 53} 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 supports students in understanding the text structure and how the information is organized within that structure (e.g., compare and contrast, sequence, problem/solution).

There are various forms of graphic organizers, including matrices, webs, maps, and diagrams. The purpose and nature of the lesson should guide the selection of the type of graphic organizer to use. The examples in Figures K and L below demonstrate the difference in how information is arranged to compare and contrast and to show the steps of a process.

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

Learning is enhanced when students work in collaborative partners or groups to complete graphic organizers. When discussing the concepts and vocabulary, students use academic language in meaningful ways.

Figure K. Example Graphic Organizer for Comparing and Contrasting

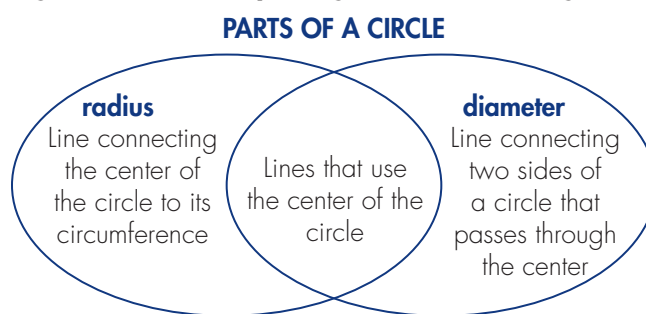
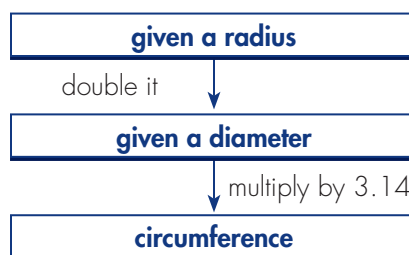


Figure L. Example Graphic Organizer for Showing the Steps of a Process



Practice 5

Teach students to make inferences by connecting key ideas within and across texts and using background knowledge.

Making inferences involves making connections and deriving elements of meaning that are not directly stated.⁴⁷ Research has shown that background knowledge enhances students' reading comprehension. Still, even when students have adequate background knowledge, they do not always activate relevant, topic-specific knowledge and use it to make inferences when they read.^{21, 33} Efficient readers analyze ideas in text and activate relevant background knowledge to seamlessly combine what they know with what they read.⁴⁸

The Difference Between Predictions and Inferences

It is important to note the difference between inferences and predictions because the two are commonly confused or used interchangeably. Teachers often teach students to make predictions while reading and even define "making inferences" as "making predictions." The research suggests that good readers rarely make specific predictions while reading. They might predict something vague (e.g., "Something bad will happen to her.") but rarely something specific (e.g., "She will find out her mother is very ill."). In addition, if a reader generates an incorrect prediction and subsequent text contradicts it, the reader is likely to have comprehension difficulties.⁵⁴ Rather than making predictions, teachers should guide students to make inferences.

There are two main categories of inferences—text-connecting inferences and gap-filling inferences.



Text-Connecting Inferences

Text-connecting inferences require the reader to connect two pieces of information literally stated in the text. There are three types of text-connecting inferences.⁵⁴

Pronoun Resolution

In this type of inference, students connect a noun or pronoun with the word to which it refers.

Example: “Mason was cold, so Guillermo gave him his jacket.”

The reader must infer that *him* refers to Mason and that *his* most likely refers to Guillermo.

Lexical Resolution

In this type of inference, students connect words or phrases in text that refer to the same or similar ideas.

Example: “The storm trackers noticed a dark funnel cloud beginning to form on the horizon. They immediately sounded the alarm and told everyone to seek shelter.”

To comprehend the passage, the reader must infer that the phrases “dark funnel cloud,” “sound the alarm,” and “seek shelter” mean a tornado is coming.

Word Meaning

In this type of inference, students determine word meanings using context clues.

Example: “In the past, people in the United States were locavores, eating food that was grown or produced near their homes. However, changes in farming, food production, and transportation have changed this. Now Americans can eat apples grown in New Zealand and beef raised in Argentina.”

To infer the meaning of *locavore*, the reader can use the clue “food that was grown or produced near their homes” and the examples at the end of the passage.



Gap-Filling Inferences

Gap-filling inferences require students to activate background knowledge to fill gaps in a text.

Example: “Both of the Burkes were writers. Mrs. Burke wrote novels and, according to Leslie, was more famous than Mr. Burke, who wrote about politics. It was really something to see the shelf that had their books on it. Mrs. Burke was ‘Judith Hancock’ on the cover, which threw you at first, but then if you looked on the back, there was her picture looking very young and serious” (from *Bridge to Terabithia* by Katherine Patterson).

Students may need help filling in the gaps to understand that Mrs. Burke publishes her books using a pseudonym.

Helping Students Make Inferences

Below are three strategies that middle school teachers can use to model and teach the process of making inferences while reading content area text. Teachers should vary the use of these strategies (and others) based upon the needs of their students and the type of text.

Fill in the Gaps

Students identify what they know and what is missing in the text. Then, they use their background knowledge to fill in the gaps. (See the example of a gap-filling inference above.)

Build a Mental Model

Students must learn to put together pieces of information within a text to derive meaning. Before reading, students should ask, “What am I supposed to learn from this passage?” or “What is the author trying to communicate?” Students also examine the structure of the text for organizational clues about the purpose. The organizational structure helps students to remember what they read and use this information to make inferences.

Students can use a planner (see Figure M) to combine text clues and background knowledge to answer a comprehension question that requires inferencing.



Figure M. Example Planner for Making Inferences

Page(s)	Statement	Type	Text Clues	Background Knowledge
2-4	The author is showing that you don't have to be related by blood to be family. You can form familial bonds through your shared experiences with others outside of your family.	<input type="checkbox"/> In the text (direct) <input checked="" type="checkbox"/> In my head (inference)	The text says, "They were my brothers by a solemn ceremony" and "Their grandma, Eula Mae Walker, was my grandma now." She goes on to describe traditions they share.	I know what it means to be "blood brothers." I have friends who I think of more as family because we are so close. My family also had Sunday dinners, so I understand.

Adapted from the Grade 5 Reading to Learn Academy.⁵⁵

Make the Text Cohere

Students must draw on relationships among words, phrases, and ideas, paying close attention to connecting words.⁵⁶ Using read-aloud and think-aloud procedures, teachers model how to link pronouns with their referents (e.g., "What does *it* refer to in this sentence?") and use connector words (e.g., *however*, *but*, *therefore*) to analyze how ideas relate. The goal is to build cohesion, coming to a full understanding of how the ideas fit together.

One way to teach this understanding is through "syntax surgery," where teachers think aloud about the connections they make between ideas, pronouns and their referents, etc., and mark up the passage by putting a circle or square around words and drawing arrows connecting them (see Figure N).

Figure N. Syntax Surgery Example

Subject-verb agreement in sentences with single or compound subjects, especially when the subject and verb are separated

My cat and dog, both of whom have a wonderful attitude, love to play in the garden.

My cat, who has many feline friends, still loves to play in the garden with my dog.

Relationships between subjects and compound predicates, especially when they are separated from each other

Emma's parents, daring to go against their daughter's wishes, followed her and her boyfriend to the restaurant, ate dinner in close proximity to them, but did not get caught.

Coordinating or correlative conjunctions connecting ideas in compound sentences

Jessica makes a wonderful buttermilk pie, but Manuel makes an even better strudel.

Either I will go the store, or you will.

Subordinating conjunctions connecting ideas in complex sentences

Although I enjoy playing tennis, I'd rather be playing basketball.

Connections between modifying phrases or clauses and what they modify

Eating dinner with my family and friends at my favorite restaurant makes life livable.

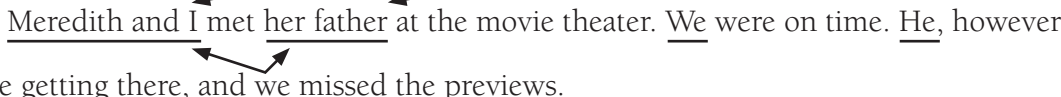
Use of transition words or other connectives to connect ideas within or across sentences

The children played many carnival games, including dart throwing and ring toss.

The children played many carnival games. For example, they played dart throwing and ring toss.

Pronouns and their referents

Meredith and I met her father at the movie theater. We were on time. He, however, was late getting there, and we missed the previews.



Words or phrases substituted for other words or phrases

After he found an old peppermint in his pocket, Ricky popped the candy into his mouth.



Omission of words or phrases using ellipsis

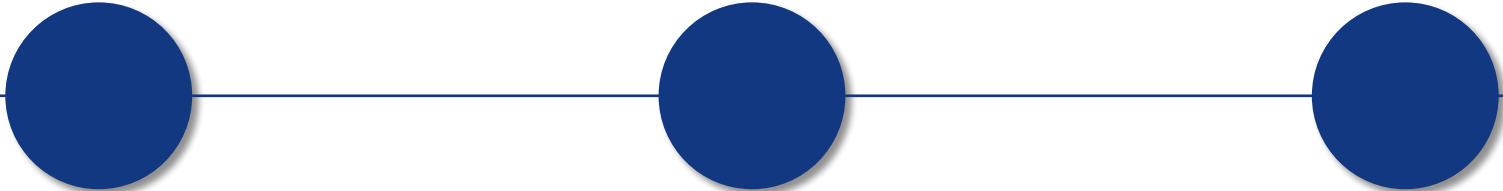
Either I will go the store, or you will. (*omitted: "go to the store"*)



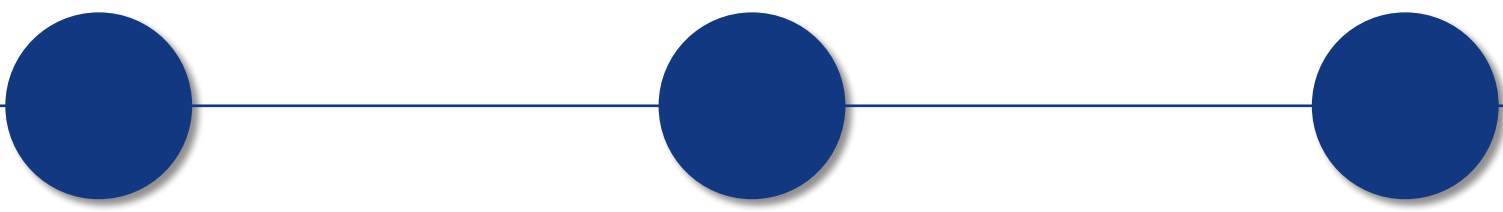
Adapted from the Grade 5 Reading to Learn Academy.⁵⁵

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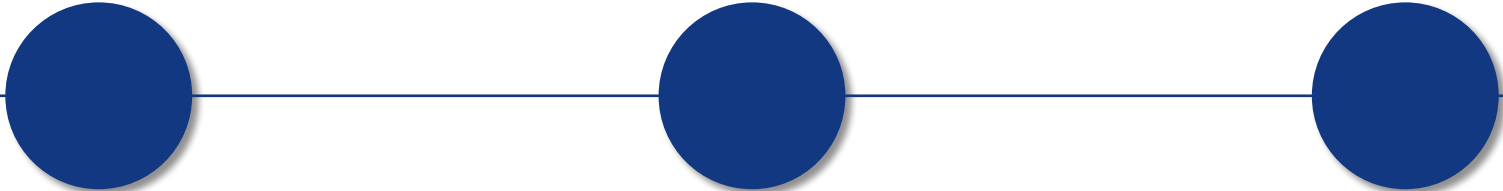
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