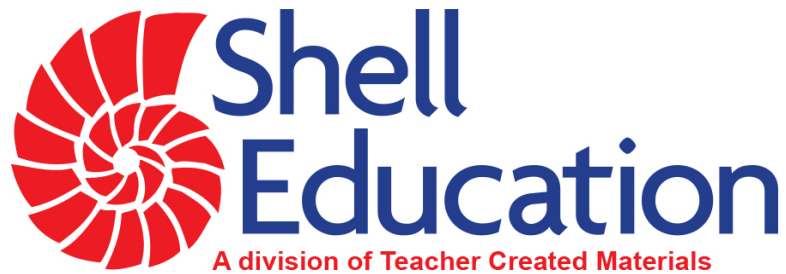


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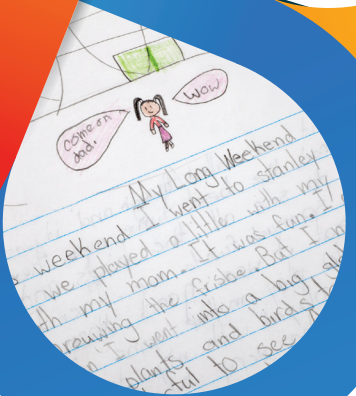
First

Next

Then

persuasive
genre
informational
poetry
fiction

What the
**Science
of Reading**
Says
about



Writing

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- **Vocabulary:** knowing the meaning of words in speech and print
- **Reading Comprehension:** understanding what is read

Since the report was published, further research has only added to the body of research that supports the findings. The bottom line? Research continues to highlight the importance of integrated approaches to literacy instruction that include the five essential components in an intertwined way. Ultimately, the best ways to ensure students become engaged and successful readers and writers have not changed significantly.

This foundational information lays the groundwork for continued understanding of how to engage students with solid literacy instruction. Several institutions provide briefs or guides that present research in easily digestible formats. The Institute of Education Sciences/What Works Clearinghouse Practice Guides provide educators with sound instructional practices related to a range of literacy skills. Additionally, the International Literacy Association provides Leadership Briefs that highlight integral pedagogy with a strong research base.

The Focus on Writing

On the surface, the conversations tied to the Science of Reading do not address writing. The reality is that writing is incredibly important to the literacy achievement of students. Educators can turn to Scarborough's Reading Rope (2001) to easily see how the foundational components of reading instruction intricately align to the work of writing and the teaching of writing.

A careful examination quickly showcases the connections. For example, the strands of language comprehension, language structures, and verbal reasoning tie directly into writing instruction and the skills of grammar and mechanics.

Writing is important. "Writing is how students connect the dots in their knowledge" (National Commission on Writing 2003, 6). Without quality, science-based instruction in writing, literacy will continue to falter, and students will not develop the skills needed to be successful. Like reading, writing is complex. Learning to write requires a range of complex skills and immense practice.

The writing process is one of the most powerful ways that students can showcase their understanding, communicate their learning, persuade others, and discover their voices.

Ultimately, writing instruction meets this purpose: “to construct real meaning” (Hawkins et al. 2008, 10).

The writing process is one of the most powerful ways that students can showcase their understanding, communicate their learning, persuade others, and discover their voices. There are many purposes for writing. Clearly connecting to the Science of Reading, teachers consistently ask students to write in response to reading. Students use writing to demonstrate their learning and the structures of language and text they have come across in their reading. Students are also asked to write to describe experiences, to provide reasoning for important action, to highlight their opinions, and to create original stories.

Primary teachers promote writing and support their students in various ways. Sentence frames provide students with structured and modeled experiences to help them put pencil to paper and highlight their voices. These experiences begin with simple options and pave the way for students to continue to develop the structures and knowledge that make them writers. Teachers infuse supports, such as graphic organizers and outlines, to help students put their ideas together. Teachers also use texts as models of great writing, further strengthening the connections between reading and writing.

Research consistently influences writing instruction. The Institute of Education Sciences (Graham et al. 2012, 2016) articulates key components to ensuring quality writing instruction. These components include the following:

Elementary Level

- Teach students the writing process.
 - Teach students strategies for the various components of the writing process.
 - Gradually release writing responsibility from the teacher to the student.
 - Guide students to select and use appropriate writing strategies.
 - Encourage students to be flexible in their use of the components of the writing process.
- Teach students to write for a variety of purposes.
 - Help students understand the different purposes of writing.
 - Expand students’ concept of audience.

- Teach students to emulate the features of good writing.
- Teach students techniques for writing effectively for different purposes.

Secondary Level

- Use a Model-Practice-Reflect instructional cycle to teach writing strategies.
 - Model strategies for students.
 - Provide students with opportunities to apply and practice modeled strategies.
- Engage students in evaluating and reflecting upon their own and peers' writing and use of modeled strategies.

Joan Sedita (2019) developed a model that demonstrates the essential strands that contribute to skilled writing (see figure I.4). Sedita's Writing Rope is similar to the construct of the Reading Rope (Scarborough 2001). The strands include these five aspects of writing:

- **Critical Thinking:** Focus on critical thinking and executive functioning. Infuse awareness of the writing process and the use of background knowledge.
- **Syntax:** Focus on how sentences work.
- **Text Structure:** Focus on types of texts, paragraph structures, organizational patterns, and linking and transition words.
- **Writing Craft:** Focus on word choice, audience, and literary devices.
- **Transcription:** Focus on spelling, handwriting, and keyboarding skills.

Ultimately, the work of teaching writing is similarly complex to the teaching of reading and requires understanding the process of writing and how it works. The connections between reading and writing are immense and should regularly be made explicit to students. When students are engaged in reading complex and interesting texts, they are consistently exposed to the author's intentional decisions as a writer. Similarly, as students develop syntactical awareness through writing instruction, they develop rich understandings of how words work together to form meaning.

would likely find some shortcomings in this writing. Given that she was a young writer, there are a lot of great things going on in this little paragraph.

- The writer uses complete sentences.
- The writer introduces the topic and provides a closing.
- The writer uses a variety of punctuation to support meaning.
- The writer uses a range of vocabulary to show detail.

There are some things missing, too.

- The writer did not use time-order words.
- The writer did not vary sentence structure.

This experience provided my daughter with an opportunity to put pencil to paper. It was one of many writing opportunities her first-grade teacher provided. Student samples such as this give teachers information about what students can do and what they need to learn how to do. In this book, we share how to analyze the skills proficient writers need, and provide effective writing instruction.

—Jen Jump

Navigating This Book

Each of the first five chapters of this book showcases important research that supports the instruction of writing across the content areas.

Chapter 1	The Recursive Writing Process
Chapter 2	Genre Characteristics
Chapter 3	Prewriting and Organization
Chapter 4	Revise for Purpose: Syntax of Sentences and Beyond
Chapter 5	Grammar, Usage, and Mechanics

These chapters are structured to bridge the gap between the science of literacy instruction and classroom practice. Each chapter begins by examining the research with a thoughtful and critical eye. Following the research, you will find

instructional implications. These implications identify how the research should impact the work of educators in classrooms today. Next, you will find key terms for teacher understanding. Each of these key terms is defined and showcased in a classroom example.

Each chapter also includes research-based instructional strategies. These strategies are aligned to grade-level bands: K–1, 2–3, 4–5, and secondary. However, many of these strategies have utility across grade levels and can be modified to support students beyond the bands suggested. Each chapter closes with the following sections:

- **Top Must-Dos:** A summary of research implications, the must-do list supports all teachers as they navigate taking the Science of Reading directly into their classrooms.
- **Further Considerations:** Offering additional insights about effective instruction, this section also includes (as appropriate) guidance for moving away from practices that are not supported by research.
- **Reflection Questions:** A short list of questions to push the practice of engaged educators provides conversation starters for professional learning or self-reflection.

The final chapter in this book, written by guest author Kim Carlton, takes an in-depth look at an effective strategy every teacher should be using—micro writing. Ms. Carlton demonstrates the power of this strategy for ensuring that students experience small wins that lead to big wins in their writing.

Take a deep breath. While we educators do not have a Hippocratic oath, we know the great responsibility we face each day. Louisa Moats (2020) said it best: “Teaching reading is rocket science.” Let’s build the literacy rocket together.

Prewriting and Organization

Background Information and Research

When students understand how to structure writing based on genre, the process of writing can begin. At this stage, some students may think they will be hit with inspiration and just start to write. Remember, writing is a learned skill, which means students can practice and get better. The process of writing begins with prewriting and organization. Prewriting allows for the generation of ideas, and organizing is a way to put those ideas into a structure that is appropriate for the task, audience, and purpose within a genre.

Asking different writers about their prewriting strategies will likely yield a variety of answers. “While many writers have traditionally created outlines before beginning writing, there are several other effective prewriting activities. We often call these prewriting strategies ‘brainstorming techniques’” (KU Writing Center 2021, para. 1). Brainstorming allows the writer the space to experiment with thoughts, to meander in various directions, until a clear writing path reveals itself. Effective brainstorming requires a safe environment where students are free to explore (and abandon) different paths and think out of the box. Keeping this stage of the process playful “can engage reluctant writers and help children learn from one another. Further, play fosters creativity and...opens up the space for inquiry and problem solving” (UNICEF 2018, 10).

There are useful strategies to support brainstorming, including list-making, developing thought clusters, and freewriting. Providing structures for brainstorming does not limit creativity. On the contrary, pushing against a structure can *foster* creativity as students try to problem-solve to meet the criteria. “In a knowledge economy where rote tasks are [or] can be completed by machines, and almost all information is available with one click, students need to be ready to learn independently, and constantly adapt, innovate, and creatively problem-solve” (Davis 2018). Brainstorming strategies can “help you with both your invention and

organization of ideas and can aid you in developing topics for your writing” (KU Writing Center 2021, para. 1).

Brainstorming can be one of the first steps of the writing process. It allows for student creativity and ideas to be collated into one space. Once students have brainstormed a variety of ideas, those thoughts and ideas can be organized. “An

important but often forgotten step is transitioning from a brainstorm to an organized plan. We can teach students how to organize their thinking in a way that is appropriate for the genre and will improve the quality of their written piece” (Reading Rockets 2021, para. 14). Think of a laundry basket full of socks. You might pour out the socks into a pile, and then begin sorting them, first by color, and then by style. Eventually, you may find a match for most or all of them. Similarly, students can start to connect the thoughts and ideas they generated during the brainstorm, finding

Brainstorming allows the writer the space to experiment with thoughts, to meander in various directions, until a clear writing path reveals itself. Effective brainstorming requires a safe environment where students are free to make mistakes and think out of the box.

creative reasons for the matches they make. Some of their thoughts might not seem to align, so these can be set aside and used later. Students can then begin to organize their ideas based on the genre of writing, the content area, or the purpose for writing. Modeling the use of graphic organizers to capture their thinking and suggesting strategies such as outlining, using tree maps, creating interactive notebooks, or using folded paper models will support students as they design their writing plans. Being creative and having fun during this process increases students’ sense of agency and intrinsic motivation and encourages them to return to their notes during the drafting and revision stages for more inspiration.

Connection to the Rope

Scarborough’s Reading Rope (2001) “illustrates the many strands that are woven into skilled reading” (Auray 2020). The strands dictate *strategy* use for increased language comprehension and practice to achieve *fluency* in word recognition. In much the same way, writing requires strategic instruction in genre, structure, and sentence-combining, as well as practice negotiating the stages of the writing process. Brainstorming ideas may produce great thinking, but students need to be guided through the process of organizing those thoughts to get ready for drafting.

To do this, students need to recognize that good writing effectively conveys meaning to the reader. “Becoming a strong writer involves learning, practicing, and coordinating all these skills. Writing may be the most difficult thing our students learn in school because it requires them to apply what they have learned as readers (phonics, vocabulary, text structure), plus additional skills (planning, considering audience, handwriting, revising, etc.) to generate their own work” (Reading Rockets 2021, para. 5).

Strategy instruction is best accomplished through guided practice with a gradual release of responsibility. For reading instruction, this means modeling strategic ways to unpack text, to examine the author’s purpose and craft, and to integrate ideas from other sources to inform your understanding. For writing instruction, the teacher models the stages of the writing process, starting with brainstorming and leading to organizing. This reinforces the understanding of genre and text structure; the recognition of task, audience, and purpose in the selection of supporting details and elaboration; and the use of language such as transition words. When students begin to organize, they make decisions about these writing structures that help them shape their initial drafts. “Writing like reading is not an innate skill we are born with, it needs to be explicitly taught in order for children to learn how to do it well. When teaching direct writing instruction, the same model holds true—again reinforcing the reading/writing connection” (Auray 2020, para. 8).

Implications for Teaching and Learning

“To enable our students to write well, we need to help them by explicitly teaching the components of effective writing” (Reading Rockets 2021, para. 5). Writing is a learned skill, and as such, each step in the process deserves explicit attention. “You cannot assume that improvement will evolve without specific skill instruction or informed teacher direction” (Auray 2020, para. 11). Providing structure for brainstorming and tools to assist with organization are fundamental to help reinforce skill building and continued practice.

Gradual release in the brainstorming and organizing stage follows familiar steps. The Institute of Education Sciences Practice Guide (Graham et al. 2012) describes how to use gradual release in writing instruction, specifically for brainstorming and organizing. First, the teacher provides background knowledge, including why students should use brainstorming and how organizing their ideas will help them. For brainstorming, tell students this activity loosens their thinking and opens their

creativity. For organizing, explain that tools such as charts or outlines help them visualize the structure their writing will take.

“ You cannot assume that improvement will evolve without specific skill instruction or informed teacher direction.

— Dea Auray
(2020, para. 12)

”
Next, the teacher describes ways to brainstorm strategically, using prompts to generate ideas. Encourage students to brainstorm in silly or unconventional ways. Stray thoughts often result in divergent thinking and creative problem-solving. Describe different ways to pull the thoughts together (like sorting the socks). Encourage students to articulate the connections they make. Are they informed by the genre? Use templates to help students make decisions about the ideas that are most relevant to the task.

Model and think aloud as you organize the thoughts from your brainstorm. Show students you are also an author, and allow them to use your sentences or sentence frames as mentor texts until they feel confident generating their own. For those who are ready, incorporate their suggestions into your writing to show that you value their contributions.

Give students time to collaborate in small groups to practice applying the techniques you have been modeling. Working with their classmates will spur new ideas and create unique connections, which will only enhance their own thinking. Plus, oral discourse is the precursor to writing. Collaboration allows students to learn and internalize academic vocabulary and complex sentence structures. Assist students as they practice using these strategies to come up with ideas, but remember to be a facilitator, asking questions of students rather than giving answers. Allowing students to have agency over their thinking will help them be more confident when they are asked to replicate the strategy independently.



Group Idea Mapping

Grades: 2–3

Description

In this brainstorming activity, students work together in small groups to sort ideas and to make visual connections between ideas, using sticky notes, drawings, or online applications. Students must collaborate to find connections.

Rationale

Mapping is a way to capture and organize the ideas of a group on any topic and to represent those ideas visually. Because of the diversity of the group, this exercise stimulates creative connections and provides an opportunity for analytical problem-solving as the group works to form connections between varied concepts.

Roles and Responsibilities

Teacher: Facilitator

- Models multiple ways to represent ideas visually.
- Allows sentence fragments or drawings for this activity.
- Introduces guiding questions to assist if students get stuck.
- Gives students roles, such as recorder, presenter, or facilitator, to ensure participation from all.

Student: Contributor

- Generates as many ideas as possible.
- Understands that all ideas are accepted.
- Has permission to ask clarifying questions.
- Looks for and honors connections that may not be obvious.

Process

1. Have students work in small groups. Distribute a sheet of chart paper to each group, and ask them to write the name of the topic in the center of the paper.
2. Tell students they each must contribute ideas about the topic. Have them take turns. The first student adds an idea and draws a line connecting it to the topic. The next student can either add a new idea or add a connection to the first student's idea, and so on. Each student must explain their connection.
3. After each student has been able to contribute at least three ideas, ask them to discuss what they notice about the connections they made.
4. Ask students to do a gallery walk and visit each of the other maps. Tell them to return to their own maps and each add one more connection if needed, based on the ideas they observed from the other groups.
5. Ask the groups to identify the strongest connections and to be ready to explain their thinking. Have a member of each group share about the connections they made and explain the connections.
6. Tell students they are now ready to begin organizing their own writing, using the chart paper to guide their thinking. Have them use an outline or another writing template to start planning their drafts.

Differentiation

Give students a time limit to generate ideas to spur thinking. Have students use different-colored sticky notes or markers to represent different categories of ideas. Add linking words to the connecting lines, such as *because*, *similar to*, or *results in*, to guide students as they transition to drafting. If using an online application, have students choose unique fonts or colors to represent their own ideas or to organize ideas. As a variation, use subtopics of a bigger idea for each group's map. During the gallery walk, ask students to prioritize three of the subtopics they would choose to include in a writing assignment about the larger topic.



Power Notes

Secondary Grades

Description

Power Notes is a strategy for students to use to respond to or summarize material they have read. Students assign numbers to their main ideas and details to visually display the differences between main ideas and details in an outline form. Main ideas are Power 1 ideas, and details or examples are either Power 2, 3, or 4 ideas.

Rationale

Power Notes help students organize their ideas from most to least important as they create an outline before they begin to draft. Assigning numbers gives an easy visual way to sort information and to remember to include every detail that supports each main idea.

Roles and Responsibilities

Teacher: Planner

- Thinks aloud to demonstrate how to select and number the main ideas and details.
- Encourages use of graphic organizers or templates.
- Asks students to include citation information as they take notes.
- Follows up with revision activities that refer to the Power Notes.

Student: Researcher

- Annotates the text to find information quickly when needed.
- Discusses ideas orally before assigning numeric values.
- Uses content-specific and academic vocabulary as well as appropriate transition words.

Process

1. Introduce a graphic organizer, such as a tree map or an outline template, with a space to write a topic and spaces to add two or three main ideas and two or three supporting details for each idea.
2. Model how to read and annotate text to select several examples of information that explain the topic. Ask students to discuss with partners which of the evidence could be a main idea and which represents a supporting detail.
3. Ask students to label the main idea as *Power Idea 1* in their graphic organizers. Have them work together to number the details in order of significance or importance as *Power Ideas 2, 3, and 4*. Have them record the details in their graphic organizers.
4. Monitor students as they discuss, and ask several students to share justifications for their decisions. Give them time to re-evaluate their selections and make changes as needed.
5. Have partners continue to work together to annotate a new piece of text and to record a new main idea and supporting details in the same manner. Listen as the partners discuss how they decided to number the main ideas and details.
6. Ask students to work independently to annotate a third piece of text and to number the main idea *Power Idea 1* and the supporting details as *Power Ideas 2, 3, and 4*.
7. Tell students to use the graphic organizer as a basis for an outline, and ask them to each begin writing a draft about the topic, using the three main ideas labeled as *Power Idea 1* to create a thesis statement.
8. Remind students that each *Power Idea 1* becomes the topic sentence of a supporting paragraph, and the *Power Ideas 2, 3, and 4* become the details used to explain and justify the main ideas.