



Leading
WITH
Learning
WestEd

SEPTEMBER 2017

Scaffolding Writing Through the “Teaching and Learning Cycle”

PAMELA SPYCHER, WestEd

Acknowledgments

Special thanks to Beverly Derewianka and Mary Schleppegrell for their generous and invaluable feedback on drafts of this manuscript. Appreciation to Kim Austin, Jen Blitz, Danielle Garegnani, Liz Jameyson, Marianne Justus, and Rachel Lagunoff, who all contributed ideas to this manuscript.

About WestEd

WestEd is a nonpartisan, nonprofit research, development, and service agency that partners with education and other communities throughout the United States to promote excellence, achieve equity, and improve learning for children, youth, and adults. WestEd has more than a dozen offices nationwide, from Massachusetts, Vermont, and Georgia, to Illinois, Arizona, and California, with headquarters in San Francisco. For more information, visit <http://www.WestEd.org>.

© 2017 WestEd. All rights reserved.

Requests for permission to reproduce any part of this report should be directed to WestEd Publications Center, 730 Harrison Street, San Francisco, CA 94107-1242, 888.293.7833, fax 415.512.2024, permissions@WestEd.org, or <http://www.WestEd.org/permissions>.

Suggested citation:

Spycher, P. (2017). *Scaffolding writing through the "teaching and learning cycle."* San Francisco, CA: WestEd.

Contents

Leading with Learning	iv
Introduction.....	1
The Need to Scaffold Writing Development	1
Overview of the Teaching and Learning Cycle.....	3
Five Stages of Learning.....	3
Scaffolding: Temporary Support for Student Autonomy	5
The Zone of Proximal Development: Working in the “Sweet Spot” of Learning.....	6
Understanding How Different Written Genres Work.....	8
Scaffolding Through the Teaching and Learning Cycle	10
Carefully Planning for the Teaching and Learning Cycle	10
Culminating Writing Tasks	11
Stage 1: Building the Field.....	12
Kickoff Tasks.....	12
Collaborative Group Tasks	12
Integrated Academic Reading, Discussion, and Writing	13
Multimedia and Community Integration.....	13
Stage 2: Exploring the Language of Text Types	13
Text- and Paragraph-Level Analysis	14
Sentence-Level Analysis	15
Word-Level Analysis	15
Stage 3: Jointly Constructing Texts	16
Teachers’ Role in Co-Constructing the Text	17
Stage 4: Independently Constructing Texts.....	19
Success Criteria and Student Framing Questions	19
Stage 5: Reflecting on Own Texts	20
Having Students Evaluate Writing.....	21
Making Writing Public	21
Improving Students’ Writing Promotes Educational Equity.....	22
Ready to Explore More?.....	23
References	24
Appendix A. Resources for Teaching Writing in Different Genres.....	26

List of Figures

Figure 1. Teaching and Learning Cycle.....	4
Figure 2. Zone of Proximal Development.....	6
Figure 3. Scaffolding: High Challenge with High Support.....	7
Figure 4. “We Can Affect Our Future: Human Impact on Local Ecosystems” Unit Planner.....	10
Figure 5. Success Criteria for Science Explanations.....	19
Figure 6. Student Framing Questions for Writing – Science Explanations.....	20
Figure A1. Genres Typically Written in School: Purpose, Organization, and Language Features.....	26
Figure A2. Explanation Genres: Cheat Sheet.....	28

Leading with Learning

Leading with Learning: Systemically Transforming Teaching for English Learners (Leading with Learning) is a comprehensive district improvement model that involves intensive professional learning for teachers, instructional coaches, and principals as well as systems-level support for school and district leaders. The goal is raising student achievement, especially for English learners and other culturally and linguistically diverse students. To accomplish this, Leading with Learning focuses on strengthening four daily essential teaching and learning practices.



Introduction

Many teachers will find the following scenario familiar: Ms. Castro is a 5th grade teacher in a school composed of ethnically diverse students, about 50 percent of whom are learning English as an additional language, or English learners (EL students). At the beginning of the school year, she plans a unit of study about various ecosystems around the world, consisting of several weeks of engaging, interactive, inquiry-based learning activities and culminating in an independently written science report. Her goals are for her students to understand and explain how the living and non-living components within the ecosystems interact, why it is important to preserve these ecosystems, and how people's actions impact the ecosystems' health. Ultimately, she wants her students to be critical thinkers, effective communicators, curious about the natural world, and develop a sense of responsibility for protecting it. As is the case with all teachers, she wants her students to be able to express thoughtful, evidence-based, and coherent ideas in writing.

However, at the end of the unit, when Ms. Castro sits down to read and evaluate her students' final reports, she finds that their writing falls flat. Most of the students' writing is disorganized and does not reflect all the rich content learning that took place over the previous several weeks. While a handful of students were able to write clearly and coherently, most of the reports are choppy and fragmented, and some are merely lists of facts. Ms. Castro is frustrated as she had set high expectations for her students and believes they were capable of achieving them. However, she now realizes that she may have assumed that, by engaging in all of the rich science learning activities throughout the unit, her students would automatically "pick up" the language skills they would need to write clear and robust science reports.

Through the evidence of her students' writing, she reflects that she did not spend enough time supporting them to write effectively. She knows that when her students enter middle school, they will be expected to meet high levels of academic writing across the disciplines, yet she is unsure about how to help them to develop the understandings about writing and the requisite skills to write effectively to meet those expectations.

The Need to Scaffold Writing Development

As educators, we make all sorts of assumptions about our students. By the time our students reach the upper elementary grades – and certainly by the time they are in secondary settings – we may think they are already familiar with how to write effectively. However, not all students have had the opportunities and support in school that are needed to effectively express their ideas through writing. Nobody is born knowing how to write well, and some students have more exposure and access to academic ways of speaking and writing in their home environments (either in English or in other languages) than other students. For many students, particularly EL students,¹ teachers must provide them with scaffolding to develop both their writing skills and their awareness about how writing works so that they can become effective and informed writers.

¹ In addition to students who are learning English as an additional language, many other students benefit from scaffolding for writing development, including students with special learning needs, students who speak dialects of English that differ from the academic ways of using language that are highly regarded in school contexts, and students who may not have access in their home environments to academic texts and discussions.

Ms. Castro's vision for her students is one that is shared by many teachers. She wants them to become empowered writers, not only so they can learn content more deeply through the writing process and produce successful science reports, but, more importantly, so they can critically analyze writing from a range of sources and communicate effectively to a variety of audiences. Ultimately, she envisions her students using writing as a powerful tool for agency and advocacy in the world (Delpit, 2006; Schleppegrell, 2004).

In Ms. Castro's next grade-level team meeting, in which the 5th grade teachers meet to analyze student writing samples from the ecosystems science unit, she expresses her frustrations with her colleagues (who share them) and proposes that the team work together to develop deeper understandings about how to scaffold academic writing for their students. One of Ms. Castro's colleagues suggests that the team explore a pedagogical framework for scaffolding writing, with a particular emphasis on supporting EL students, which she recently learned about in a summer institute: The *teaching and learning cycle* (TLC). The team decides to learn about the model, try out some tangible instructional practices from it, and then reconvene to analyze and reflect on student writing samples to see how well the approach worked to improve student writing.

This paper shares what the teachers learned in their action research project in which they implemented the TLC; explains what scaffolding entails; describes how the language in different genres (or text types) works; and provides concrete ideas for scaffolding writing through each stage of the TLC.

Overview of the Teaching and Learning Cycle

The TLC is a pedagogical framework for scaffolding academic writing through deep and critical thinking tasks, academic discussions, interactive reading, and language development. The model was first developed in Australia in the 1980s by teachers working with educational linguists drawing on the theoretical framework of Systemic Functional Linguistics.² It has since spread globally as educators see how the quality of their students' writing improves through the framework's intentional, language-focused support that simultaneously builds deep content knowledge.

The goal of the TLC is to support students' autonomous writing skills in a specific genre, or text type, within a particular discipline (such as a science explanation, historical argument, or literary story). This approach is quite different from many other approaches to writing instruction and support that provide more generic writing tips – such as the use of graphic organizers or sentence frames – in ways that are isolated from deeper, integrated content and language learning goals. Through the TLC, students have the opportunity to delve deeply into disciplinary learning, analyze and “unpack” discipline-specific written text types, “rehearse” writing the same text type, and independently write using tools that support their reflection on (and self-evaluation of) both the content and language they are using. The TLC is especially powerful for longer units of study (e.g., four to six weeks or more) in order to focus on the concurrent development of language and literacy with content knowledge. However, the model can also be adapted for use with a sequence of lessons that span only a week or two (for example, when exploring the ideas and language in a particularly high-quality selection of children's literature).³

Five Stages of Learning

In the TLC, teachers guide their students through five stages of teaching and learning (as shown in Figure 1):

1. Building the field
2. Exploring the structure and language of text types
3. Jointly constructing texts
4. Independently constructing texts
5. Reflecting on one's own written texts

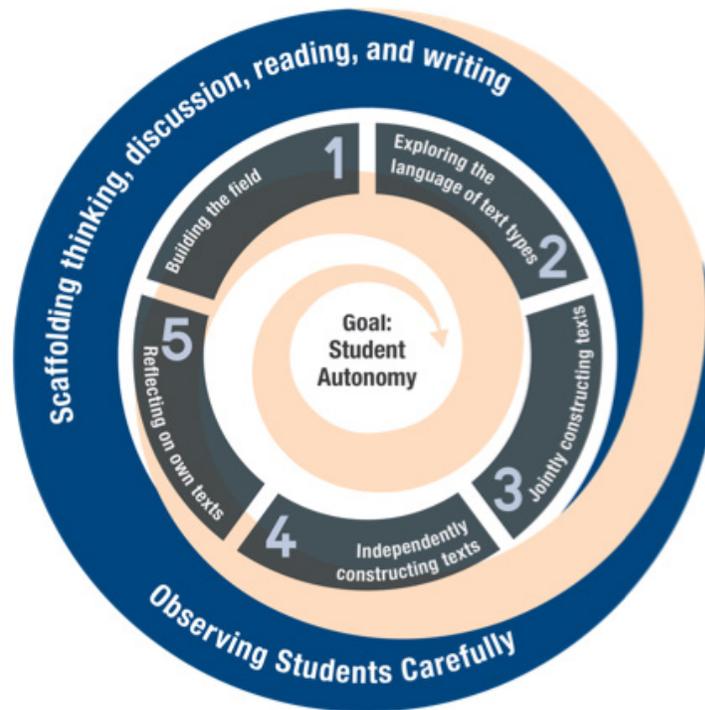
Most teachers are familiar with stage one, “building the field” (i.e., building deep content knowledge through language-rich experiences), and stage four (students writing independently). However, stages two, three, and five are often absent from typical classroom instruction. Teachers may model writing for their students or show them a “mentor text” (i.e., an example of good writing), but it is rare for teachers to explicitly analyze the language of particular texts with their students and to facilitate discussions

² To read more about Systemic Functional Linguistics and the TLC model, see: de Oliveira & Lan (2014); Derewianka & Jones (2016); Gibbons (2015); Klingelhofer & Schleppegrell (2016); Rose & Martin (2012); Rothery & Stenglin (1995); Spycher (2007); Spycher & Linn-Nieves (2014); and Spycher & Spycher (2016).

³ In addition, teachers may find that specific techniques in any stage of the TLC, as presented in this paper, are useful outside the context of a sequenced unit of study.

connecting these language explorations to their content learning goals. In the scenario at the beginning of this article, for instance, Ms. Castro engaged her students in stage one of the TLC throughout the unit and then, at the end of the unit, asked her students to write about the topic (stage four). However, to help her students learn to write effectively about the content they have learned, Ms. Castro must also focus on stages two, three, and five, which contain rich opportunities for the concurrent development of academic oral and written language development and deep content learning.

Figure 1. Teaching and Learning Cycle



Source: Developed by author, based on Derewianka and Jones (2012), Gibbons (2015), Rothery and Stenglin (1995), Spycher and Linn-Nieves (2014), and Spycher and Spycher (2016).

Scaffolding: Temporary Support for Student Autonomy

Scaffolding is specialized and temporary support that is tailored to a learner's needs and designed to support their⁴ future independence. Scaffolding requires meaningful interaction with other people and with content. It is a social process in which language is central. Consider the experience of a young child learning to tie their shoes. Around the age of four or five, parents and caregivers are typically still performing this task for the child. At some point, however, the child or the adult may notice that the child is ready to tie their own shoes and that this independence is a wonderful goal for all parties concerned. The parent does not merely tell the child how to tie their shoes or hand the child an instruction manual. Instead, the parent nurtures independence and cultivates agency in the child through scaffolded support, including demonstrating the process of tying a shoe and explaining how it is done in language that is understandable and also providing ample opportunities for the child to practice with guidance.

This specialized support is focused on bridging the gap between what the child can do currently (perhaps starting a knot) and what the child will be able to do at some point in the future (completing a bow). As the child begins to learn how to tie their own shoes, the adult will have many suggestions, and the child may ask questions about technique. The child may, at times, become frustrated, and the adult may support them with comments such as, "You are trying so hard. Watch me do it again," or "Could you try putting one lace over the other?" or even "Wow, I didn't even think about doing it that way. How creative of you!" As the child's skills grow, less and less support is provided. Eventually, with ample assistance and encouragement, the child is able to tie their laces all on their own with ease, and a small celebration is in order.



Adults choose (either explicitly or implicitly) how they will support children's learning in goal-directed activities such as these. They are the experts in this case, and their job is to guide children toward independence with the task. Aside from deep wells of patience and the ability to restrain from doing the task themselves, adults must have a specific goal in mind, know a lot about the child (including their personality and where they are in their ever-changing development), and have a battery of approaches at hand that provide the balance of just enough support and autonomy. Essential to this task is an understanding of how to gradually diminish support until the learner's full autonomy is achieved. Otherwise, the child may be ever-dependent upon others for shoe tying or become frustrated and walk through the world with untied laces, tripping along as they go.

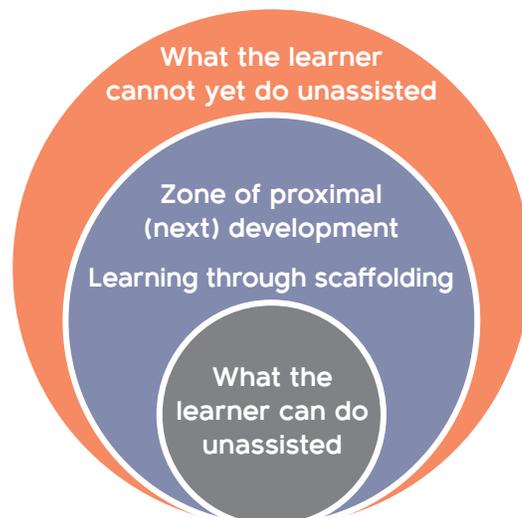
⁴ In this paper, gender-neutral pronouns (e.g., "their" rather than "his" or "her") are used since some people identify as neither male nor female and, accordingly, prefer gender-neutral pronouns.

The Zone of Proximal Development: Working in the “Sweet Spot” of Learning

The portrait of scaffolding above represents a sociocultural theory of learning and development, founded by Russian psychologist Lev Vygotsky (1896–1934), who believed that social interaction is fundamental to cognitive and linguistic development. Before his untimely death at the age of 37, Vygotsky developed the concept of the *zone of proximal* (or “next”) *development* (ZPD), which refers to the space, or cognitive gap, between what a learner currently can do independently and what they will be able to do – with support from a more knowledgeable other – in the future. Vygotsky believed that it is not enough for teachers to only consider what students are capable of doing on their own (on a test, for example); it is critical to observe what they are capable of doing in a social setting, in collaboration with others. He noted that, often, learners are able to successfully complete a task within a group before they are able to do the task independently, as it is in these group settings where their minds and language abilities are being pushed and stretched by other students. Both careful observation of students as they interact with others on academic tasks and analysis of their independent work (writing samples, for example) allows teachers to teach students in their “sweet spot” of learning, or ZPD.

Building on Vygotsky’s work, Jerome Bruner (1915–2016) coined the term “scaffolding” to refer to a *process* in which teachers or peers offer support that assists learners in developing autonomy with new understandings or skills, essentially working in the learner’s ZPD and gradually tapering off this support as it becomes unnecessary. The metaphorical term is borrowed from architectural scaffolding in order to visually emphasize that the support is intended to be *strategic*, provided at just the right time and in just the right place, and *temporary*, gradually removed as the learner has progressed to a level where the particular scaffolding is no longer needed. Bruner believed that a learner (even at a very young age) is capable of learning any material so long as the task is organized and facilitated appropriately. That is, with highly challenging learning, strategically designed support is provided at the points of need and gradually withdrawn as learners become increasingly independent. Bruner also believed that teaching is about opening up worlds of possibilities and that cognitive development can be sped up through scaffolding.

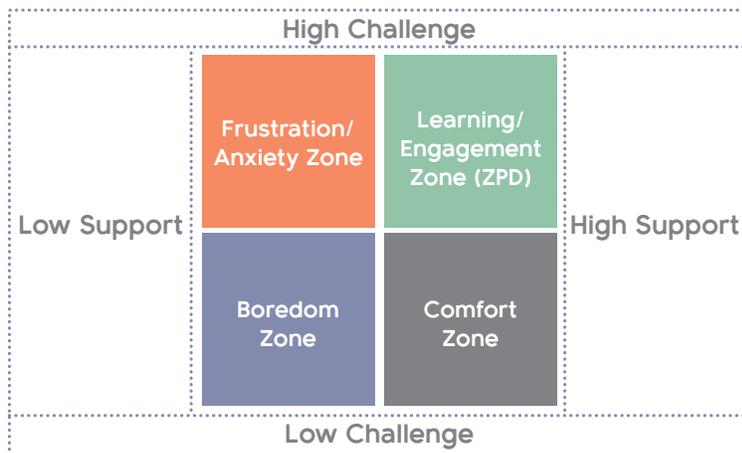
Figure 2. Zone of Proximal Development



Source: Vygotsky (1978).

Gibbons (2015) has noted that scaffolding does not occur by accident. It is an intentional and strategic process that requires teachers to know students' learning needs deeply and from a variety of angles so that appropriate support can be provided. She depicts scaffolding as a relationship between high challenge and high support and the effect these combinations have on students (see Figure 3).

Figure 3. Scaffolding: High Challenge with High Support



Source: Gibbons (2009), adapted from Mariani (1997).

Rather than simplifying content and learning tasks for students, they are supported to fully engage in intellectually challenging, language-rich, goal-oriented learning through scaffolding. The notion of scaffolding focuses teachers on students' assets, or what they bring to the learning task, and envisions their potential to achieve ambitious learning goals through informed and deliberate teacher action. This deliberate *planned* scaffolding is complemented by *just-in-time* scaffolding, or in-the-moment support, provided during learning tasks as teachers are observing and listening to students carefully to determine when (and when not to) step in. Just-in-time scaffolding is an important part of the formative assessment process, which involves teachers making refinements and adjustments to what they are doing based on evidence of student learning (through observation of students while they are learning, for example) and providing relevant feedback and supports that students enact to advance in their learning (Heritage, 2011). Scaffolding can also be provided peer-to-peer, as students themselves can be "more knowledgeable others" and guide their peers to stretch cognitively and linguistically.

Understanding How Different Written Genres Work

In order to provide scaffolding for students to write various academic genres, or text types, teachers themselves need to understand the notion of “genre.” Broadly speaking, genres are socially recognized ways of using language that enable people to express their ideas about the world, establish relationships with others, and accomplish various goals. In order to understand how different written genres do these things, it is important to consider the social purpose, overall organization and structure, and specific language features of each genre.

Purpose. Fundamentally, written genres are distinguished by their social purposes – that is, what the text is intended to accomplish within a particular context and content area and the desired effect on the people who will be reading it (the audience). Social purposes include recounting (e.g., telling about an experience or an event), entertaining (e.g., entertaining and sometimes teaching others through a fictional story or memoir), informing (e.g., telling about a historical event or science facts), explaining (e.g., helping others to understand a political system or a science process), and persuading (e.g., getting others to believe something or take action on an issue). These social purposes shape the genre, guide how it is structured and organized, and determine which language resources are most powerful to use in the text, given its intended effects on readers.

Organization. Each genre has evolved to be structured and organized in predictable ways and to leverage predictable language features. For example, a fictional story – the purpose of which is generally to entertain and to convey certain overarching messages or themes – tends to have a lot of action and is typically presented as a sequence of events in three major stages:

- » *Orientation* – in which the author *orients* the reader by introducing the setting and characters and possibly foregrounding the plot.
- » *Complication* – where things get *complicated* and the plot thickens.
- » *Resolution* – where the problem is *resolved* and the reader comes away with a satisfied feeling, possibly having learned an important life lesson.

Language features. Different genres leverage particular language resources to achieve their social purpose. For example, stories tend to have the following:

- » Dialogue (so the reader can get into the head of characters and understand what they are thinking and feeling and what they are like, as well as to move the plot along, in ways that “show” and don’t merely “tell”).
- » Descriptive vocabulary (which helps readers imagine the world in which the characters live or evoke certain emotions).

These language features help the text achieve its purposes of entertaining the reader and (often) conveying universal themes and life lessons. Students can become “language detectives” (or “sleuths”), where they explore various texts and tease out the particular language patterns and features that make the text effective (or ineffective) or that distinguish the text from other genres. Helping students recognize patterns of language that are in different genres supports their reading comprehension, since they will know what

kind of structure and language to anticipate when they encounter different genres, and their writing, since they will be more aware of the expectations people have when they read the genre. (For reference, Figure A1 in Appendix A shows a few different genres that students read and write in school, highlights their social purposes, and provides some information on the typical organization and language features of each genre.)

Of course, not all texts follow predictable genre guidelines, and different genres in each discipline have different characteristics, as well (for example, a literary argument looks different than a science argument). However, teaching students about the key features of different genres – their social purposes, how they are *typically* organized, and the language features *frequently* used in them – helps them see patterns in language and highlights particular language that is effective for different genres. Exploring a variety of texts in the same genre helps students see the variation that is possible in such texts. It helps students understand that language is not simply a set of rules but rather an endless range of choices that are made intentionally, based on one’s social purpose, the context and content area, and their intended audience, not to mention the mode of communication (for example, a formal written essay about an economic policy versus a Tweet about it).

This awareness about how language is used in different genres places students in a more informed, metalinguistically⁵ aware position, which helps them to make intentional, deliberate choices when they write and speak and gives them a new way of framing what they are reading, helping them to comprehend better. This awareness raising, guided by teachers, makes academic writing more transparent and accessible for all students and is therefore empowering for both students and their teachers.

The next section illustrates how scaffolding and genre awareness can be brought together in a coherent process to support students’ successful academic learning, reading, discussions, and writing.

⁵ Metalinguistic awareness involves the ability to think about and discuss language itself. Using a “metalanguage,” or language about language, supports this process. In school, using traditional grammatical terms (e.g., verb, dependent clause, long noun phrase) can help support this process. However, learning the metalinguistic term is not the goal; using metalanguage as a tool to make meaning with texts is the goal.

Scaffolding Through the Teaching and Learning Cycle

Let's revisit Ms. Castro and her 5th grade team. It's toward the end of the school year, and since their initial meeting at the beginning of the year, reviewing their students' writing and deciding to learn more about the TLC, the grade-level team has tried out some of the instructional approaches from the TLC and experimented with organizing their existing units through the lens of the TLC stages. As a result, they've seen some promising evidence of improvement in their students' writing. The team decides to use the TLC to revise a unit on local ecosystems they had planned to teach toward the end of the school year, keeping existing learning tasks that have been effective in the past and adding new ones the team has recently tried out or wants to try out.

Carefully Planning for the Teaching and Learning Cycle

Throughout the planning process, the teachers consider their learners: the cultural and linguistic assets and background knowledge each student brings to the learning process; where each student is in their cognitive, linguistic, and social development; how the students interact with one another in team-based tasks, and any additional routines and norms that will need to be established for effective group work; and, importantly, what the students themselves are interested in and curious about. Over the course of the year, the 5th graders have become interested in how they can have a positive impact on their local community, and the teachers are interested in nurturing this growing sense of agency and responsibility.

The team titles the new unit "We Can Affect Our Future: Human Impact on Local Ecosystems." The unit planner (Figure 4) outlines the big ideas, culminating tasks, and inquiry questions in their unit.

Figure 4. "We Can Affect Our Future: Human Impact on Local Ecosystems" Unit Planner

Unit Title: <i>We Can Affect Our Future: Human Impact on Local Ecosystems</i>	
Big Idea: We can protect our local ecosystems if we understand them better and how human behavior affects them.	
Inquiry Questions (with student input): <ul style="list-style-type: none">• How are living and non-living things in an ecosystem interdependent?• How does energy flow through an ecosystem?• Why do "keystone species" play a critical role in ecosystems?• In what ways do people's actions impact ecosystems?• How can we preserve and protect ecosystems and why would we want to?	Culminating Tasks: <p>An independently written science explanation about a keystone species and how it interacts within its ecosystem, the effects of human impact on the ecosystem, and multiple suggested solutions for conservation.</p> <p>A small-group multimedia project, including a video "infomercial" and companion blog post about a keystone species and the local ecosystem in which it lives.</p> <p>A letter to the editor (argument) of the local newspaper, informing the public about what the students have learned and arguing in favor of one or more conservation actions.</p>
Texts and Videos Used:	Materials Needed:
Week-by-Week Outline:	

Once they have a unit outline, inquiry questions that will focus the teaching and learning tasks, and culminating tasks that provide students with an opportunity to apply their learning, the teachers discuss how they will organize learning tasks in each stage of the TLC. They decide that each class will first learn about one keystone species in a local ecosystem: bats. Knowing their students, they anticipate that learning about this keystone species – an animal or plant species that play a critical role in maintaining the ecosystem, the removal or significant increase or decrease of which may result in a dramatic shift in the ecosystem – will promote high levels of curiosity and engagement. The teachers intend to help the students build up important understandings about this keystone species and the ecosystem in which it lives, as well as knowledge of the language of science explanations on the topic, which they will be able to transfer to their own research and writing.

Culminating Writing Tasks

Culminating tasks are what students do at the end of the unit as a result of the scaffolding that has prepared them to do so. The three culminating tasks for the unit are a science explanation, a group multimedia project, and a letter to the editor (argument).

The **science explanation** each student will write independently will be scaffolded through the TLC, and will include a

- » *Description* about their keystone species.
- » *Systems explanation* about the interdependent relationships in the ecosystem in which it lives.
- » *Consequential explanation* about the impact of humans on the ecosystem.

After the students have studied bats and their ecosystems and have explored and rehearsed writing science explanations about bats with high levels of teacher support, they will work in small research groups to investigate another local keystone species and ecosystem of their choice. As students conduct their group research, their teachers will periodically continue to explore texts about bats and their ecosystems as a model to support the students in their science learning and writing development.

At the end of the unit, in addition to writing their individual science explanations, the students will use what they learned to create a **group multimedia project**, which will include a video “infomercial” and companion blog post about their local keystone species and ecosystem, along with conservation ideas. The multimedia projects will be posted on the school website and also sent to conservation organizations.

In addition, the class will co-construct a **letter to the editor** about bat conservation, and then pairs of students will work together to write additional letters pertaining to the keystone species and ecosystems they researched.

The next sections illustrate some of the specific tasks the students engage in through the TLC, as well as additional tasks the teachers have tried out in other units or want to try out in the future. The various activities in the five stages of the TLC are intended to provide scaffolding for high-quality academic writing by the end of the cycle. In addition, each stage contains learning tasks that are themselves scaffolded to ensure each student has the opportunity to engage fully in them.

Stage 1: Building the Field

The first stage of the TLC focuses on building deep content knowledge through language-rich experiences that involve a lot of discussion and exploration (this stage is called “building the field” for short). In truth, “building the field” occurs throughout each stage of the unit, but it is placed as the first stage in the TLC model to emphasize the foundational importance of meaning-making and to provide a context within which students can develop their literacy skills and knowledge about language. In this stage, efficiency and success are supported through established protocols and norms for group work.

The following are examples of stage 1 learning tasks used by Ms. Castro and her fellow teachers:

Kickoff Tasks

- » **K-C-L chart:**⁶ At the beginning of the unit, students chart (with their teacher as scribe or by using Post-it notes) what they already know (K) about keystone species and ecosystems to help leverage their prior learning or existing knowledge; they also chart what they are curious about (C). Over the course of the unit, the class adds to the chart the important things they are learning (L), as well as additional things they are curious about. This charting process provides valuable information to teachers (and to students themselves) about where students are in their understandings about the topic at various points in the unit. It also allows for students to refine or add to the initial inquiry questions.
- » **Inquiry activator:** The students engage in an “image analysis gallery walk” in which they roam the room in triads to (1) view and discuss various images related to bat ecosystems (and ecosystem degradation) and (2) add “I notice...” and “I wonder...” Post-its to make their thinking visible and see that of their peers. In other units, this could include a science experiment to activate an inquiry stance.
- » **Science-oriented field trips:** One of the tasks the students engage in at the beginning of the unit is a field trip to a local bat colony. Students record field notes on what they observe, take photos to examine back in the classroom, and write questions on what they are curious about.

Collaborative Group Tasks

- » **Science experiments:** Students collaborate in small groups to engage in hands-on exploration tasks to investigate their inquiry questions. The students use clear protocols to engage in the experiments and regroup as a whole class to discuss results and interpretations.
- » **Research groups:** Students work in small, choice-based groups to research their topic and create their projects. Each group member has an assigned role (e.g., time-keeper, note-tracker, encourager, process manager), and the roles change periodically so that each student has an opportunity to experience various roles.
- » **Expert group jigsaw:** Students form “expert groups” where each group reads and discusses a different text on the same topic (e.g., different ways that humans impact bat ecosystems) and becomes experts on the information in that particular text. “Jigsaw groups” are then formed where members of each expert group come together to share their particular area of expertise with members of other expert groups.
- » **Socratic seminar:** Students facilitate a discussion in which they share their opinions on a variety of engaging and open-ended topics, such as debatable solutions to environmental issues. They discuss these topics using evidence and facts to support their opinions. The discussion follows a structured-seminar format in which all students have a role. For example, students in the inner circle discuss the questions, while students in the outer circle take notes on the discussion and “coach”

⁶ K-C-L charts document the following about a topic: What we know already, what we are curious about, and what we are learning.

them by critiquing their responses, encouraging them to elaborate, and providing them with needed facts between discussion segments.

- » **Collaborative summarizing:** Students collaboratively construct, in pairs, a summary statement (15–20 words or fewer) of a short section of an important text (e.g., a few paragraphs on bats, ecosystems, or keystone species) in order to distill the most critical information in the text. The pairs might share their summary with another pair, critique them, and work as a group of four to create a revised one before sharing with the whole class.



Integrated Academic Reading, Discussion, and Writing

- » **Paired reading tasks:** Students read and discuss many different complex science informational texts (first about bats and then about their own keystone species and local ecosystems), using structured note-takers, well-designed prompts, and other supportive methods to promote deeper thinking and extended conversations.
- » **Teacher read-alouds:** Teachers model fluent and active reading behaviors by reading aloud a variety of complex texts or text excerpts on the topic, strategically stopping to model and/or have students participate in the following: summarizing what was read, making predictions, responding to text-dependent questions, highlighting effective or interesting language used, or otherwise reflecting on the text.
- » **Science reflection logs:** Students write in their science logs daily, responding to open-ended questions from collaborative reading tasks, adding information on their research projects, or taking field notes during field trips or science labs.
- » **Academic vocabulary development:** Students learn general academic vocabulary and domain-specific vocabulary, in context. A “young scholars” word wall displays high-leverage general academic words to be used in discussion and writing tasks, and a “science word wall” displays domain-specific words labeling diagrams of bat anatomy, ecosystems, and other important topics.

Multimedia and Community Integration

- » **Structured video and podcast discussions:** Students view or listen to short, engaging videos and podcasts on the topic, using focus questions and structured note-takers to guide their discussions. During a video viewing, they stop periodically to discuss their notes in pairs or triads and add missing information or revise their notes. They use the notes in their culminating projects.
- » **Ask an expert:** Local scientists, activists, or other experts are invited to be interviewed by the class. Local experts who can speak about culturally and community-relevant aspects of the topic are particularly desired. Small groups prepare interview questions in advance and nominate those questions to be asked first. The notes from the interview will be used as evidence for the culminating tasks.

Stage 2: Exploring the Language of Text Types

This stage is often left out of curriculum materials and instruction and is likely new to many teachers. When students have built up some content knowledge – and language – about the topic, they can use this knowledge to delve deeper into discussions about language itself and how it works. This stage is an opportunity for teachers to highlight and amplify the purpose, overall structure, and particular language features of the texts students are reading and will be writing on their own by the end of the unit. It is also an opportunity for students to explore and discuss what they find interesting, intriguing, and important about the language of the genres they are encountering.

Exploring language is enhanced when students have a language with which to talk about it, in other words, a “metalinguage.” Metalinguage can include terms that are already familiar to many students, such as verbs or nouns. It can also include new terms that allow students to discuss specific language features that make up effective texts, such as “text connectives” (e.g., additionally, however, as a result), which support cohesion or help the text “hang together.” Students might also discuss language that authors use to “turn up” or “turn down” the intensity of claims or evidence (e.g., “extremely unlikely” versus “unlikely”). Expanding students’ metalinguistic repertoire empowers them to talk about language, which helps them to better understand both language and content (Schleppegrell, 2013).

Expanding students’ metalinguistic repertoire empowers them to talk about language, which helps them to make meaning and effectively express themselves. Students can even create their own terms for talking about language. For example, when analyzing long noun phrases about bat anatomy (e.g., “winged membranes *that allow them to fly*”), they might like to call the embedded clauses they find in long noun phrases “that chunks” (e.g., “that allow them to fly”) rather than the more technical term “embedded clause.”⁷ Being able to identify smaller groups (e.g., “that chunks”) within long noun phrases makes reading long sentences more manageable and meaning making more possible (as opposed to getting lost and jumbled up in a long, complex, densely packed sentence). Discussing what “that chunks” are doing in long noun phrases (telling more about “winged membranes,” for example) also provides models for students to emulate when they do their own writing.

Ms. Castro and her colleagues use an Explanation Genres Cheat Sheet (see Appendix A, Figure A2) to help them focus on important features of explanations in stage two of the TLC. The teachers focus on different levels of scaffolded language analysis (text and paragraph level, sentence level, and word level), to ensure the students have a comprehensive understanding of the genre. Above all, they focus on scaffolding language analysis through talk; all teaching and learning tasks in stage two are done collaboratively and through dialogue. Examples of some of the stage-two TLC learning tasks the teachers incorporated into their unit include the following:

Text- and Paragraph-Level Analysis

- » **Identifying purpose and audience:** The students discuss who they think the intended audiences for particular texts are, as well as what they think the author’s intended purpose was for writing the text. Students also discuss particular purposes for larger sections or even paragraphs of certain texts to see how an author’s purpose might be different at different points in the text.
- » **Analyzing text structure and organization:** Students explore the meaningful stages, or big sections of different texts. They might do this by simply drawing lines around each stage of the photocopied text. Or, they could work together to reconstruct larger parts of text that have been cut apart and “jumbled” ahead of time by the teacher. As with all tasks, this should be appropriately challenging in order to spark discussion and meaning-making.
- » **Analyzing cohesion:** Students explore how texts “hang together” through cohesive devices, such as openers (e.g., how an author begins a whole text, a paragraph, or sentence); text connectives (e.g., however, consequently); and pronoun reference (e.g., this, it, them).
- » **Collaborative text reconstruction:** Students “rehearse” how to write effective texts by listening to the teacher read aloud a short (e.g., one paragraph) “mentor text” several times, taking notes on key words and phrases, and then working together in pairs or small groups to reconstruct the text as closely as they can to the original, using their notes (the original text is hidden from view). The class

⁷ “Embedded clause” is the term used in Systemic Functional Linguistics to, in this case, refer to a clause that is part of, or embedded in, a nominal group (or noun phrase). A more familiar term for readers may be “restricted relative clause.”

then checks the text they reconstructed with the original text and engages in a discussion about some of the language features in the text (either features pre-determined by the teacher or features that proved challenging for the students to incorporate during the text-reconstruction task).

- » **Text analysis:** Students analyze specific sections of mentor texts to dig deeper into the language patterns in them. For example, after students have engaged in a collaborative text reconstruction task for the introductory paragraph of a science explanation, they become language sleuths, searching the paragraph for long noun phrases. They then unpack and track the different types of text connectives the author used to help the text flow.



Sentence-Level Analysis

- » **Sentence unpacking and repacking:** Students “unpack” the meanings in sentences that are important to understanding the central meanings of the text overall and that help them think about the unit’s inquiry questions. This is done by breaking up the different chunks of the sentence (e.g., dissecting a particularly long noun phrase into smaller parts), translating the meanings into more familiar language, and discussing the meanings. This is what proficient readers do when they come to particularly challenging sentences. (As a bonus, the students might work together to “repack” or put the unpacked sentence back together in a concise way, with the original sentence now hidden from view.)
- » **Sentence expanding:** Students start with a basic sentence (e.g., “Bats are mammals.”) and work together to expand the sentence by adding words or phrases, which enriches its meaning and adds precision (e.g., “Bats are mammals that have winged membranes between their fingers, which helps them to fly.”). Teachers might display a photo for students to use to spark ideas (about describing the physical features of the bat in the photo, for example).
- » **Sentence combining and condensing:** Students work together to combine two or more sentences into one, discussing how they might merge ideas or use their knowledge of nominalization to condense ideas concisely. For example, the students play a “tea party” game where each student has a different sentence on a strip of paper. Their task is to find a partner and combine the two sentences, condensing the language as much as they can while maintaining the meanings of the original sentences.

Word-Level Analysis

- » **Examining verb types:** Students investigate the verb types in a text. For example, the verbs might be “being/having” verbs (e.g., Bats *have* wings. Bats *are* mammals.); “doing” verbs (e.g., Some bats *eat* fruit. Bats *fly*.); “thinking/feeling” verbs (e.g., The bat *wondered* where its mother was.); or “saying” verbs (e.g., “Go away!” the bat *shrieked*.). Science texts tend to have mostly “being/having” and “doing” verbs, whereas narratives (stories, for example) use a lot of “thinking/feeling” and “saying” verbs, as well. When students recognize how different types of verbs are used in different genres, they can use that knowledge in their own writing.
- » **Discussing nominalization:** Nominalization is when verbs or adjectives (or whole events or clauses) are condensed into a noun or noun group (e.g., “People cut down the forests” is condensed to “Deforestation led to massive flooding” or “They were cautious, and that was important” becomes “Caution was critical for addressing the problem”). By using nominalization, information is summarized and compacted, and now the “thing” (e.g., deforestation, caution) is in a lead position in the sentence, where it is more active and can also be evaluated. Students analyze texts for examples of nominalization, discuss the meaning of the words in the context of the sentence and paragraph, and even play a game where they “translate” the passage in which the nominalization appears into more everyday language (e.g., translating the text and adjusting the language they use as if they were

talking to a younger sibling).⁸ Students create a word wall with nominalizations they may want to use in their culminating tasks.

- » **Exploring evaluative language:** Students explore how authors use language to “turn up” or “turn down” the intensity of their claims or arguments. For example, in a letter to the editor about ecosystems, the author might use strong adjectives, such as “this *critical* issue,” or modal verbs, such as “we *must* do something.” Analyzing how language is used supports students’ ability to be critical consumers of media and other messages that may be persuasive but may or may not be factual.

In this stage, students should be analyzing a range of content-specific texts – from familiar to complex. Above all, the texts should be interesting and engaging. The goal of this stage is to cultivate curiosity about – and better understanding of – language as it relates to the content and genres being explored. As students embark on language exploration tasks, teachers might encourage them to view themselves as language detectives working to find the hidden content meanings revealed in the clues of language. Language exploration tasks should be interactive, engaging, and enticing.

Stage 3: Jointly Constructing Texts

Once students have built up some content knowledge (stage one) and have explored how the language in particular genres works (stage two), they are well prepared to engage in teacher-facilitated writing tasks in which they collectively write a text (or part of a text) that is in the same genre as the one they will later write independently. This stage can be thought of as rehearsal for writing, through talk. It should feel like a comfortable, and even informal, conversation about how to create a text.

In this stage, the teacher is responsible for the writing and for drawing out content understanding and language from the students. Meanwhile, through ongoing discussion facilitated by the teacher, the students negotiate which language to include in the text. For example, if the class is jointly constructing the first part of an explanation about human impact on bat survival, the conversation might go this way:

Ms. Castro: And what about this part? We said we wanted to include a new piece of information about how bats navigate at night. How could we start this section to let readers know that we are starting a new idea? Everyone think for a moment about how you might start this section. [Pauses as students think silently.] Now, tell your partner what your idea was. [Pauses as students share in pairs.]

Jada: We could say, “Bats use the waves in sounds to get around.”

Ms. Castro: They do use sounds, and can you say a bit more? Could you use some of the science language we’ve been using?

Jada: We could say, “Bats use the waves of sounds – I mean, the sound waves – and echoes, and that’s called echolocation. They use it to navigate.”

Ms. Castro: Yes, that’s called echolocation, and they use it to navigate. Nice use of the terms “echolocation” and “navigate.” These words really give us precise meanings. Wow, we have so many amazing scientists in this classroom. Okay, tell me if this is what you mean (writes on a chart), “Bats use sound waves and echoes, which is called echolocation, to navigate...” Does anyone have anything to add on to that? How can we elaborate on this topic?

⁸ Students could also discuss differences and similarities in the way they expressed the same ideas to different audiences, which supports their understanding of register, or the way language is chosen to be conveyed, based on context.

David: Can I add on? I think we could say [reading the first part, which is written on the chart], “Bats use sound waves and echoes, which is called echolocation, to navigate at night and capture their prey. They get their prey at night because they go out at night, and they sleep in the daytime.”

Ms. Castro: David, nice job expanding and enriching that idea by adding important information about bat behavior. [She adds “at night and capture their prey” and then pauses.] What you also added after that is so important. I wonder if there is another word, a scientific word we could use to mean what you said about bats going out at night and sleeping in the daytime. Does anyone remember that scientific word?

The class (in unison): Nocturnal!

Ms. Castro: Oh, that’s right! So, how about, “Bats are nocturnal, which means that they sleep during the day and are awake at night.” I wonder if it would make sense to put that information about bats a bit earlier.

[The class agrees that this would make more sense, and Ms. Castro circles the sentence and draws an arrow to where the class determines it should be placed.]

Ms. Castro: Now that we have this information about echolocation, how can we introduce some new information about the problem that bats have with echolocation because of what humans have done? Take a moment to refer to the charts we created when we were reading about this, and then talk with your partner about what you’re thinking about so that we have lots of ideas to include.

Teachers’ Role in Co-Constructing the Text

In the co-construction of text, Ms. Castro’s role is to be a facilitator of learning and to use her expertise to stretch students’ thinking and language. This stage of the TLC provides many opportunities for “just-in-time” scaffolding, as she can only anticipate so much. She must be ready to rephrase and recast statements, ask follow-up questions, and so on, where needed. This requires her to know where her students are in their learning; have an idea of what the final text might look like; be ready with techniques for navigating the class toward the expected outcome; and be open to new and unexpected ideas that students may have.

During stage three, the teachers don’t try to jointly construct a lengthy science explanation about bats with the students all in one sitting. Instead, they focus on writing one part of the text at a time so that the pacing is not cumbersome and so that students can focus on specific language features in any given stage of the text. (In stages one and two, the teachers even jointly construct a sentence from time to time with the students in order to scaffold their writing and prepare them for jointly constructing longer stretches of text.) The teachers use chart paper for the joint construction of the bats science explanation so that the co-constructed writing is visible to all students as a model.

Here are some tips that the 5th grade team of teachers uses as reminders of their roles when jointly constructing texts with their students:

PREPARING STUDENTS FOR THE ACTIVITY

- » **Set the purpose** of the activity by telling the students what type of text they will be co-constructing and the social purpose of the text (e.g., to persuade, inform, explain, entertain, recount an experience).
- » **Briefly review** the information about the topic students will be writing about, contained on charts (created with and by students in previous lessons) so they have a lot of ideas to contribute.

- » **Invite the students** to discuss with a partner how to start the text so they all have an opportunity to discuss their ideas before coming together as a whole class to discuss and co-construct the text.

WRITING ON THE CHART

- » **Act as a scribe**, inviting students to co-construct the text, drawing their attention to relevant language features (e.g., vocabulary, phrasing, organization) that could be used, providing sentence starters, recasting what they say, and stretching their thinking and language as needed. We are still modeling while they are “rehearsing” the writing process that they will soon do on their own.
- » **Model messy writing** by crossing out, adding, and/or rearranging words and phrases. Generally model that writing is an iterative process that involves multiple drafts.
- » **Don't put a period** at the end of the sentence right away, so students can expand and enrich the ideas that are already there.
- » **Leave spaces** between each row of sentences so that more information can be added, if needed.

DRAWING OUT STUDENTS' IDEAS

- » **Coach the students** by thinking aloud and asking them to think aloud about how to expand and enrich sentences, combine and condense sentences, edit sentences, move information around, and include appropriate general academic or domain-specific vocabulary.
- » **Be open to students' ideas**, even if they are different from our own and what we were expecting. After they share their ideas, there will be opportunities to go back and discuss other ways to express the idea, if needed.
- » **Recast ideas** that students offer to model how to use language more proficiently or in another, more academic way.
- » **Use metalanguage** where appropriate (e.g., “Who can think of a good *text connective* to join these ideas between sentences?” “What's a more vivid *doing verb* to describe the bat's behavior?” “How could we expand this *noun phrase* to describe the bat's appearance?”)

POSSIBLE QUESTIONS TO ASK

- » How should we start our text?
- » What word could we use here?
- » Is there another way to say that?
- » Could you say more?
- » How could we expand that idea to ___?
- » How could we condense that idea?
- » How could we connect those ideas?
- » Why is that information important for this text?
- » Is that the order we want?

The activities in this stage provide a valuable opportunity for teachers to observe how their students are “taking up” the content ideas and language they've been learning. It's also a way for teachers to model how real writers write. Writing is messy. There's a lot of thinking and talking (to oneself and others) and editing happening while writing. When students go to write their own texts, it should also be messy.

Once the text has been co-constructed, if it is too messy, it can be recopied onto another chart, annotated with the larger stages and phases of the genre and any significant language features that need highlighting. Finally, the jointly constructed text can serve as a mentor text to which the students can refer when composing their own texts.

Stage 4: Independently Constructing Texts

By this stage, the students are now well prepared to write texts independently. This means they could be writing by themselves, with a peer, or with a small group with less teacher support, as is the case with the 5th graders who will write their own science explanations about bats before launching into their small groups to research another keystone species and local ecosystem of their choice. With independent writing, differentiation is important, as some students will still require substantial teacher support (newcomer EL students, for example), whereas others may require very little. As students are writing independently, the teacher can provide assistance to individuals or small groups or extension support (i.e., additional or more ambitious tasks) for students exceeding expectations. The goal of this stage is not to formally assess students, but to continue to support them in becoming autonomous writers.

Success Criteria and Student Framing Questions

Figure 5. Success Criteria for Science Explanations

<i>I include these parts:</i>	<i>I include this information:</i>
Identify the phenomena	I identify the ecosystem. I identify the keystone species.
Describe the system	I describe the keystone species. I describe the ecosystem.
Explain the interactions within the system	I explain how the organisms in the ecosystem interact. I explain why the keystone species is important to the ecosystem.
Explain human impact on the system	I explain how humans impact the keystone species and the ecosystem.
	I include one or more solutions to the problem.
Final statements	I conclude with information about ecosystems and keystone species in general.

An important part of this stage is to help students be intentional and deliberate about what they are writing and the language resources they will select when they write. "Success criteria," or reminders about what is critical to address in a learning task, provide an anchor for students as they are writing (Figure 5 presents examples of success criteria for students writing a science explanation). These criteria can be posted on a chart or provided to individual students so that the expectations teachers have for their writing are transparent and so that students can hold themselves and their peers accountable for them. Students should be involved in creating and/or refining success criteria so they build ownership with the criteria.

Similar to success criteria are "student framing questions for writing," which are questions students can pose to themselves to highlight the text organization and language features of a particular genre. Figure 6 presents examples of student framing questions for the 5th graders who are writing their science explanations. The students can use these questions as they write in order to shape their reports and also to critique their own and others' writing after their reports are completed. In a writing conference with their teacher or a peer, they may ask for feedback on one or more focus areas.

Figure 6. Student Framing Questions for Writing – Science Explanations

Focus Area	Framing Questions
Overall clarity	<ul style="list-style-type: none"> • Did I clearly explain the phenomena the report is about? • Does my writing match my audience?
Organizing ideas	<ul style="list-style-type: none"> • Are the stages of my report organized logically? <ul style="list-style-type: none"> – Did I identify and describe the phenomena in the introduction? – Did I explain how or why things happen with the phenomena? – Did I conclude with general statements about the phenomena? • Did I use text connectives, pronouns, and other ways to help the text flow? (examples: <i>in addition, therefore, however, consequently</i>)
Connecting and expanding ideas	<ul style="list-style-type: none"> • Did I connect and condense ideas within sentences to be more concise? (examples: <i>such as, because, so, although, if/then</i>) • Did I expand and enrich my ideas within sentences to provide more information and detail? (examples: long noun phrases, descriptive adjectives)
Using powerful vocabulary	<ul style="list-style-type: none"> • Did I use science words to be more clear and precise? (examples: <i>echolocation, nocturnal</i>) • Did I use general “scholarly words” to “bump up” the academic tone of the report? (examples: <i>resulting in, detrimental</i>)
Checking spelling and punctuation	<ul style="list-style-type: none"> • Did I proofread for spelling? • Did I look up tricky-to-spell words? • Did I make sure to check punctuation?

Source: Adapted from Gibbons (2015) and Spycher (2013).

Stage 5: Reflecting on Own Texts

Self-reflection is an important part of the writing process, particularly since writing is often an iterative process that involves multiple rounds of review, reflection, and revision. Once students have written a solid draft of their texts, they can conference with a peer or with the teacher, using the same success criteria or student framing questions for writing as a guide to focus their feedback session. They can also convene in pairs or small groups to critique one another’s writing, using norms and agreed-upon processes, such as designated roles and the use of structured feedback protocols. Regardless of the format, students should have the opportunity to reflect on their own writing and to receive feedback on it, as well as to provide feedback to other writers, as this is how all writers grow.

In this stage, students may be polishing their writing as part of the process, but the writing in this stage is not always a perfectly polished product. For example, Ms. Castro’s students all wrote a final “bats and their ecosystem” report in stage four of the TLC, but they did not fully reflect on and edit their reports in stage five. Instead, they practiced using the reflection tools and protocols for providing peer feedback on one another’s “bats” texts, focusing largely on the process and the tools, rather than on editing their “bats” texts. When they wrote their culminating science explanations (on their group’s keystone species and ecosystem), they used the tools and processes again, and this time, they used their peer feedback to edit their explanations.

Having Students Evaluate Writing

One way to provide students an opportunity to reflect on how to improve their writing is through what is called “bump-it-up” tasks. One bump-it-up task is to provide students with four different sample texts on the same topic. The texts have varying degrees of “success,” based on criteria on which the teacher wants to focus students’ attention (e.g., cohesion, use of nominalization, accuracy). The students work together in pairs or small groups to rank the texts in order of success. During the task, the students discuss their justifications for their ranking decisions, ideally negotiating and pushing one another to elaborate.

As they closely examine the writing samples, the students record their evaluation of the writing and their reasoning for ranking the writing as they did. They could record their thinking on charts or simply on Post-it notes, as shown in the photo. After debriefing as a class and coming to consensus on the ranking, the students could then identify where their own writing falls and determine actions they could take to “bump up” their writing in a particular focus area to the next level of success.



Making Writing Public

Making writing public is an authentic way for students to receive validation for their writing and to experience the communicative power of writing. Publishing student writing in class or school newsletters (online or in print) acknowledges students as writers and gives them a voice that others can interact with. In the elementary grades, posting student writing in an area of the room where the writing can be used for further learning ensures the writing has an authentic and lasting purpose. For instance, posting each student’s monthly writing samples in the classroom, one on top of the other as the months go by (at students’ eye level so they can read the writing) allows students to reflect on their writing progress over time, as well as to read the ideas of others.

Group-created writing (e.g., infographic posters on the groups’ keystone species and ecosystems) could be viewed in a “gallery walk” where each group visits the various posters and discusses what they notice or have questions about. The groups then leave collective “We noticed...” and “We wondered...” Post-it notes on each poster, which the authoring group can then reflect on and react to.

Stocking the classroom library with student-written little books, trifold pamphlets, poetry or report collections, or other writing products is another way to both celebrate student authorship and provide students a chance to read their own and other’s work. Ideally, many of these books are first read in a class or small group “authors chair” activity where students have an opportunity to orally present their writing and interact with the audience about it.

Improving Students' Writing Promotes Educational Equity

Schools play a pivotal role in fostering educational equity. Ultimately, scaffolding students' writing skills through the TLC is an important way to provide effective, equitable learning opportunities for *all* students. By helping students develop and hone their writing skills in a number of different genres and disciplines, educators give students the tools to succeed in school and to become informed and engaged citizens. As students become more confident in their ability to communicate their ideas, they can participate in civil discourse about important topics that they have learned about through analytical reading, careful listening, extended discussions, writing, and above all, deep thinking.

Educators are responsible for providing daily opportunities for all students to engage meaningfully with texts and with others, to express and discuss their ideas about worthy topics, develop deep and nuanced understandings about the world, and realize the critical role they play in their communities and society. Teachers, therefore, need to support students' abilities to become globally competent, including helping students develop the following skills and attributes:

- » Make meaning while reading and listening.
- » Develop a discerning eye and critical stance toward texts and information.
- » Effectively express their own interpretations and thoughts about complex topics, both orally and in writing.
- » Recognize and seek to understand multiple perspectives, even when they diverge from their own ideas.
- » Engage in dialogue with others to gain even deeper understandings about complex texts and ideas.
- » Take a stand and advocate for things that are important to them and be able to support their opinions with sound arguments and credible evidence.

Providing learning opportunities to foster these types of abilities opens up numerous possibilities for students. By providing equitable access to an intellectually rich curriculum, educators can promote curiosity, reflection, mutual respect, understanding, and empathy, as well as foster global competence.

Some children will grow up to write stories as entertaining and enticing as J. K. Rowling. Others will grow up to be great orators and deliver speeches as generation-defining and persuasive as Dr. Martin Luther King Jr. Still others will become scientists or engineers who are able to communicate their critical findings through writing both to their peers and the general public. If students are provided with the kind of sustained, targeted support described in the TLC, they will have the opportunity to develop the language and writing skills necessary to be able to succeed in a wide range of endeavors.

Ready to Explore More?

The vignettes in the *California ELA-ELD Framework* provide examples of the TLC in action. These free resources can be found at the following link: <http://www.cde.ca.gov/ci/rl/cf/documents/elaeldvignettescollection.pdf>

Teaching language in context (2nd edition) by Beverly Derewianka and Pauline Jones is a master class in the teaching and learning cycle and how to support students in writing a variety of genres.

Language support in EAL contexts: Why systemic functional linguistics? (edited by Caroline Coffin) provides a deep dive into pedagogical approaches, including the TLC, derived from systemic functional linguistics. This paper is available for free at the following link: <https://core.ac.uk/download/pdf/18758.pdf>

The work of Pauline Gibbons is a rich resource for designing units using the teaching and learning cycle. Don't miss *Scaffolding language, scaffolding learning* (2015) and *English learners, academic literacy, and thinking: Learning in the challenge zone* (2009), both from Heinemann Publishing.

To go deeper into understanding language, see Mary Schleppegrell's *The language of schooling: A functional linguistics perspective*, available from Lawrence Erlbaum Associates.

The California English language development standards provide not only standards but valuable guidance on understanding how English works. See Chapter 5, "Learning about how English works" at <http://www.cde.ca.gov/sp/el/er/documents/eldstndpublication14.pdf>.

References

- Brisk, M. E. (2015). *Engaging students in academic literacies: Genre-based pedagogy for K-5 classrooms*. New York: Routledge.
- Bruner, J. S. (1983). *Child's talk: Learning to use language*. New York, NY: Norton.
- California Department of Education. (2015). *California English language arts-English language development (ELA-ELD) curriculum framework for K-12 schools*. Sacramento, CA: CDE.
- Christie, F. (2005). *Language education in the primary years*. Sydney, Australia: UNSW Press.
- Coffin, C. (2010). Language support in EAL contexts. Why systemic functional linguistics? (Special issue of *NALDIC Quarterly*). NALDIC, Reading, UK.
- de Oliveira, L. C., & Lan, S-W. (2014). Writing science in an upper elementary classroom: A genre-based approach to teaching English language learners. *Journal of Second Language Writing*, 25(1), 23–39.
- Delpit, L. (2006). *Other people's children: Cultural conflict in the classroom*. New York: New Press.
- Derewianka, B., & Jones, P. (2016). *Teaching language in context*. South Melbourne, Australia: Oxford University Press.
- Derewianka, B. (2011). *A new grammar companion for teachers*. Sydney, NSW: Primary English Teaching Association.
- Gibbons, P. (2015). *Scaffolding language, scaffolding learning*. Portsmouth, NH: Heinemann.
- Gibbons, P. (2009). *English learners, academic literacy, and thinking: Learning in the challenge zone*. Portsmouth, NH: Heinemann.
- Halliday, M. A. K. (1993). Toward a language-based theory of education. *Linguistics and Education*, 5, 93–116.
- Heritage, M. (2011). Formative assessment: An enabler of learning. *Better: Evidence-based Education*, 3(3), 18–19.
- Knapp, P., & Watkins, M. (2005). *Genre, text, grammar: Technologies for teaching and assessing writing*. Sydney: University of New South Wales Press.
- Klingelhofer, R. R., & Schleppegrell, M. J. (2016). Functional grammar analysis in support of dialogic instruction with text: Scaffolding purposeful, cumulative dialogue with English learners. *Research Papers in Education*, 31(1), 70–88.
- Mariani, L. (1997). Teacher support and teacher challenge in promoting learner autonomy. *Perspectives, a Journal of TESOL Italy*, XXIII(2).
- Rose, D., & Martin, J. R. (2012). *Learning to write, reading to learn: Genre, knowledge and pedagogy in the Sydney School*. Bristol: Equinox Publishing Ltd.

- Rothery, J. (1996). Making changes: Developing an educational linguistics. In R. Hasan & G. Williams (Eds.), *Literacy in society* (pp. 86–123). London: Longman.
- Rothery, J., & Stenglin, M. (1995). *Exploring literacy in school English* (Write it Right Resources for Literacy and Learning). Sydney: Metropolitan East Disadvantaged Schools Program.
- Schleppegrell, M. J. (2004). *The language of schooling: A functional linguistics perspective*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Schleppegrell, M. J. (2013). The role of metalanguage in supporting academic language development. *Language Learning*, 63 (Suppl 1), 153–170.
- Spycher, P., & Linn-Nieves, K. L. (2014). Reconstructing, deconstructing, and constructing complex texts. In P. Spycher (Ed.), *The Common Core State Standards in English language arts/literacy for English language learners: Grades K-5*. Alexandria, VA: TESOL Press.
- Spycher, P., & Spycher, T. (2016). Writing arguments in world languages: Scaffolding content and language learning simultaneously. In L. deOliveira, (Ed.), *The Common Core State Standards in English language arts for English language learners: Literacy in the technical subjects, grades 6–12*. Alexandria, VA: TESOL Press.
- Spycher, P. (2013). Meaning-based approaches to literacy education. In B. Irby, G. Brown, R. Lara-Alecio, & S. Jackson (Eds.), *Handbook of educational theories* (pp. 445–458). Charlotte, NC: Information Age Publishing.
- Spycher, P. (2007). Academic writing of adolescent English learners: Learning to use “although.” *Journal of Second Language Writing*, 16(4), 238–254.
- Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Cambridge: Cambridge University Press.

Appendix A. Resources for Teaching Writing in Different Genres

Figure A1 shows four different genres that students read and write in school, indicates their social purposes, and provides some information on the typical organization and language features of each genre.

Figure A1. Genres Typically Written in School: Purpose, Organization, and Language Features

Genre	Example	Purpose	Typical text organization	Some language features (vocabulary and grammar ^a)
Story	<i>The Ant and the Grasshopper</i>	<i>Entertain:</i> To entertain readers (and sometimes to convey certain lessons or themes)	Orientation • Events Complication • Events Resolution Coda (sometimes)	Text connectives for showing sequences of events: ^b • <i>once upon a time, after a long while, suddenly, soon</i> General academic vocabulary: <i>lovely, furious, rueful, hurtled</i> Verbs in the past tense (except, often, dialogue): • doing verbs that show characters' actions (<i>played, ran</i>) • thinking/feeling verbs that show the inner world of characters (<i>wondered, thought</i>) • saying verbs for dialogue (<i>said, huffed</i>)
Science informational report	<i>Pollinators in California</i>	<i>Inform:</i> To provide generalized information and sets of facts about a class of things	General Statement • Identification • Definition • Classification Description of key attributes • Features • Characteristics, appearance • Activities, behavior	Text Connectives for clarifying ideas, adding information: • <i>for example, in addition, similarly</i> Domain-specific vocabulary: <i>pollen, thorax, hive</i> General academic vocabulary: <i>gather, collect, produce</i> Generalized participants (categories, versus a specific one): <i>bees, butterflies, bats</i> Verbs in the timeless present: <u>doing verbs</u> (bees collect pollen, fly from flower to flower, and make honey.) <u>having verbs</u> (bees have honey stomachs) <u>being verbs</u> (bees are insects) Long noun phrases: Bees have a bag in their stomachs called the honey stomach, where they store nectar.

Genre	Example	Purpose	Typical text organization	Some language features (vocabulary and grammar ^a)	
Science explanation	<i>How Do Freshwater Ecosystems Work?</i>	Explain: To explain how something works or why something happens	Phenomenon identification ^c System description System explanation Interaction between the parts of the system Generalization and conclusion	Text connectives for sequencing events or for showing relationships between the parts of the system: • <i>at this point, as a result, consequently</i> Domain-specific vocabulary: • <i>organisms, amphibians, algae, protozoa</i> General academic vocabulary representing abstract terms: • <i>relationship, system, effect, interact</i>	Long complex sentences with multiple ideas connected and condensed: Verbs: being, having, doing Nominalization: ^d • <i>light penetration, sewage contamination, the collapse</i>
Argument	<i>Climate Change Is a Problem Created by Humans</i>	Persuade: To persuade others to think a certain way or do something	Position Statement • Issue • Claim/appeal • Acknowledgement of alternate views (possible) Arguments (more than one) • Orientation to evidence • Point • Elaboration Reinforcement of claim/appeal	Text connectives for sequencing, showing conditional or causal relationships, comparing or contrasting ideas • <i>first of all, because of this, therefore, on the other hand, similarly</i> Expressions of attitude or judgment through adjectives and nouns: • <i>a highly regarded expert, companies knowingly do this, a critical time to act</i>	Modal verbs and adverbs (to temper statements or evaluate ideas): • <i>should, might, needlessly, obviously, probably</i> Verbs for showing relationships: • <i>This results in...; These words symbolize...</i> Nominalization: ^e • <i>deforestation, reckless destruction of the environment, the government's reaction</i>

Source: Adapted from Derewianka (2011), Derewianka and Jones (2012), Gibbons (2009), Rose and Martin (2012), Schleppegrell (2004), and Spycher (2007).

^a Vocabulary and grammar (lexicogrammar) are not completely separated here. The term "lexicogrammar" was coined by linguist M.A.K. Halliday to emphasize the interdependence of vocabulary (lexis) and syntax (grammar). Halliday's purpose was to make explicit how vocabulary is also a part of grammar and not a completely isolated aspect of language.

^b Text connectives are a very useful "cohesive device," that is, a language resource for connecting ideas between sentences and across a text. Helping students identify how different genres leverage different text connectives will help them move beyond "first, next, last" and other types of formulaic (and often stale) ways of creating cohesive texts.

^c This is the structure and organization for a "system explanation," but there are other types of explanations with different structure and organization, including sequential, causal, and factorial, to name a few.

^d Nominalization is a language resource that is more typical of academic written text than of everyday spoken language. Nominalization is where verbs or adjectives (or whole events or clauses) are condensed into a noun or noun group (e.g.,

"People cut down the forests" is condensed to "deforestation" or "It's important to be cautious" becomes "caution"). In a science text, nominalization might be used to compact or summarize information.

° Authors might use nominalization in arguments to background (or hide) agency and objectify the argument or to foreground ideas they want to emphasize.

Figure A2 zooms in on the general purpose, structure, and language features of explanations. Note that different genres of explanations (e.g., sequential, causal, systems) will be organized differently and draw from a range of language features, based on the purpose. Teachers can use "cheat sheets" such as this one to guide their lesson planning and to make decisions about how they will focus students' attention on the features of particular genres (in this case, explanations). They can also use the cheat sheet as they analyze student writing, provide feedback to students, and refine their lessons to focus on particular aspects of the genre (e.g., cohesion).

Figure A2. Explanation Genres: Cheat Sheet

Explanations	
Purpose	<ul style="list-style-type: none"> • To explain how things work or why things happen • Common explanation genres include sequential explanations, causal explanations, systems explanations
Organization	<ul style="list-style-type: none"> • Begins with identification and description of thing to be explained • Body organized in categories (could be organized by sequential events, causal relationships, or systems components) • The conclusion makes a general comment and reinforces what has been explained
Language Features	<ul style="list-style-type: none"> • Generalized participants^a versus individuals ("bats" and not "a bat") • Long noun phrases to enrich sentences (<i>Bats use a <u>wing membrane stretched between their extremely long fingers</u> to fly.</i>) • Text connectives to create cohesion: simultaneous (<i>as, while, during, etc.</i>); sequential (<i>first, next, finally, before, etc.</i>); causal (<i>when, because, so that, due to, as a result of, etc.</i>) • Passive voice that removes agency (the doer) in actions or focuses on a process (<i>Old growth forests are cut down to create farmland. The area of feasible, cooler habitats to which species can migrate is reduced.</i>) • Nominalization that condenses large amounts of information into a noun or noun phrase (<i>Climate is an important <u>environmental influence</u> on ecosystems. <u>Impacts</u> on one species can ripple through the food web and affect many organisms.</i>) • Verb types: being (bats <i>are</i> mammals), having (bats <i>have</i> wings), doing (bats <i>can fly</i>) • Verbs in the "timeless" present tense ("bats <i>eat</i>" and not "a bat <i>ate</i>")

Source: Developed by Jen Blitz, Danielle Garegnani, and Liz Jameyson and based on Derewianka & Jones, 2016; Knapp & Watkins, 2005; Schleppegrell, 2004; Gibbons, 2015; Numeracy + Literacy (Govt. of S. Australia); and Brisk, 2015.

^a In systemic functional linguistics, "participants" are the things (nouns and noun groups) that are "participating" in the sentence. In science texts, we are not so interested in an individual bat (as might be the case in a story genre). Rather, we are interested in the general group of bats.