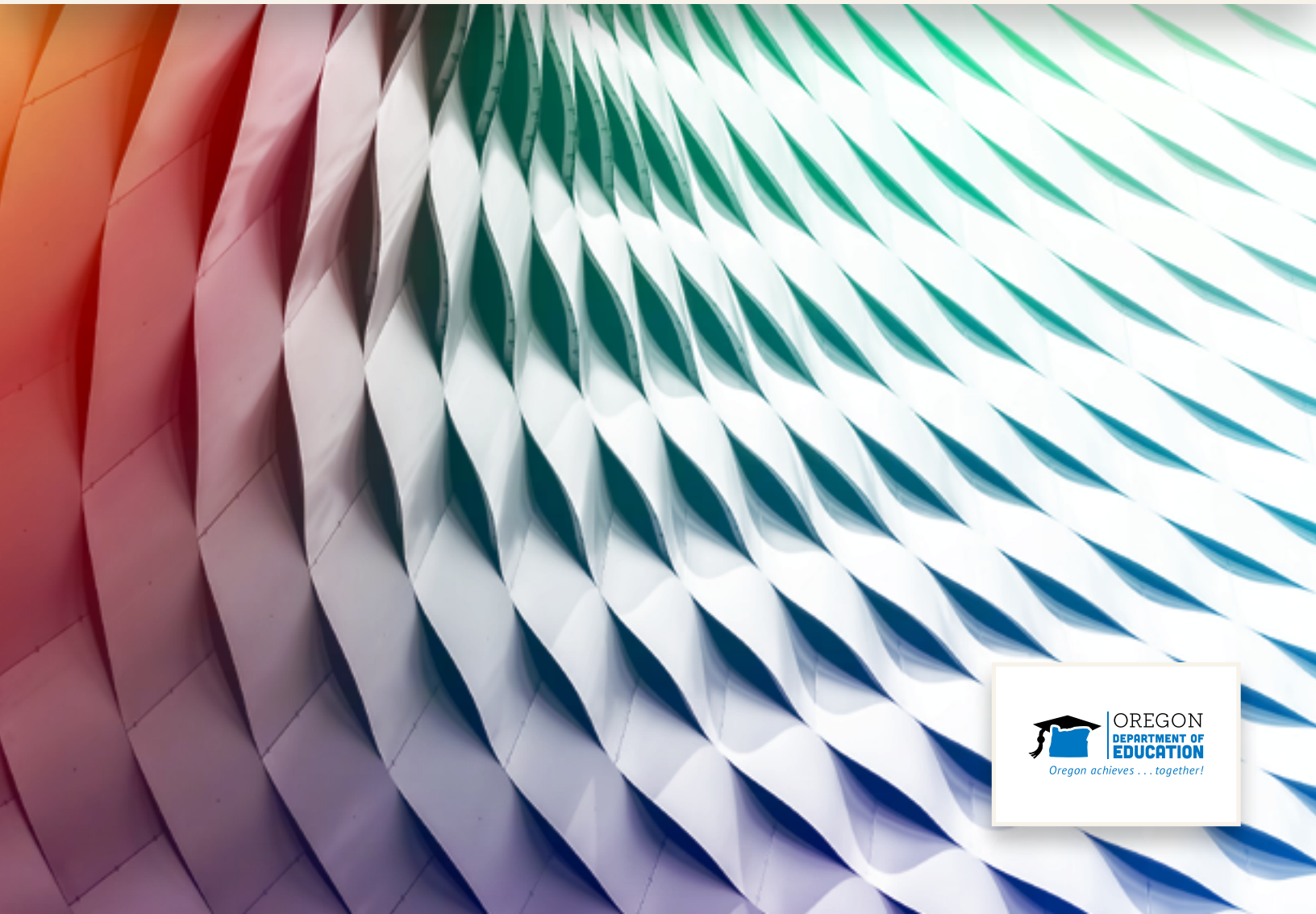
Oregon's Instructional Frameworks

Oregon's Adolescent Literacy Framework



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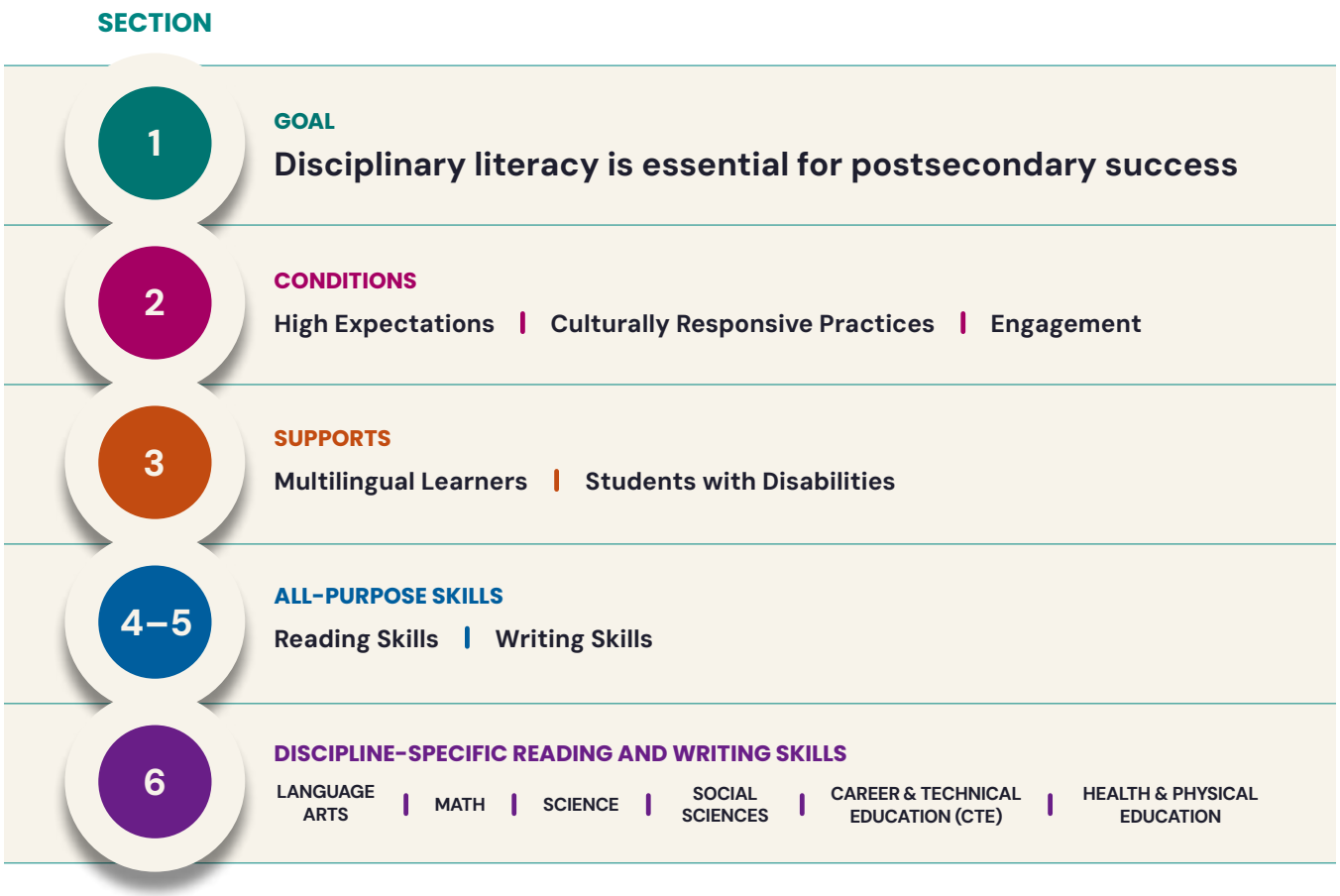
Navigating the Framework

Oregon's Adolescent Literacy Framework builds upon Oregon Early Literacy Framework, integrating enhanced language and literacy capabilities and strategies to meet adolescents' evolving cognitive, emotional, academic, social and cultural needs.

The framework is organized in six sections, each reinforcing responsive practice and reading science as essential components of adolescent literacy and multilingual development.

Figure 1 reflects the interconnected relationship between the sections and reinforces the importance of the ways in which all sections of the framework co-exist in relationship with one another.

FIGURE 1. Navigating Oregon's Adolescent Literacy Framework



To use the framework, read Section 1 to understand the what and the why of disciplinary literacy. When implementing, start with Sections 2 and 3 to establish the conditions needed for all students to thrive. Sections 4 and 5 describe common literacy practices that support learning across content areas. Section 6 provides practical guidance about integrating disciplinary literacy practices specific to each content area.

The appendices provide supplementary resources to enhance adolescent literacy teaching and learning. Appendix B provides a list of evidence-based practices for integrating career-connected learning with disciplinary literacy practices. Appendix C provides a list of oral reading fluency targets as a support for students who would benefit from additional support with the foundational literacy skill of reading fluency. Appendix D shows different approaches to writing instruction.

Key Terminology

Throughout the document, key terms are bolded when they are defined to ensure clarity and promote shared understanding.

Academic prowess: The ability to persist in problem-solving and in the synthesis and analysis of information. It involves educator expectations of student achievement, comfort with challenge and productive struggle, and intentional partnerships with families to develop and support skills.

Acceleration: A term used to describe the range of practices for supporting students who are not yet at grade level in literacy.

Asset-based: Teaching and learning that emphasize the value of students' cultural, linguistic and personal backgrounds as resources for learning and teaching.

Belonging: Suggests the sense of connectedness and trust needed to engage in co-constructing an equitable, thriving local community and vibrant civil society. It enhances self-worth, is focal among social awareness competencies and connotes experiences of acceptance, respect and inclusion within a group or community.

Cognates: Words in two languages that share a similar meaning, spelling and pronunciation. For example, many English words have a related word in Spanish.

Culturally responsive: The implicit recognition and incorporation of the cultural knowledge, experience and ways of being and knowing of students in teaching, learning and assessment.

Disciplinary discourse: The language practices and communication norms specific to different academic disciplines.

Disciplinary literacy: This refers to the habits of mind, routines and practices, texts (and how those texts are created and used), and discourses of each discipline, including career and technical education, health and physical education, language arts, mathematics, sciences, and social sciences.

Dysgraphia: A type of specific learning disability that impacts written language production.

Dyslexia: A type of specific learning disability that impacts word-level reading and spelling.

Extensive disciplinary reading: Opportunities for students to read frequently and broadly to support understanding and use of core disciplinary practices, concepts and content.

Extensive disciplinary writing: Opportunities for students to use writing to explore the practices, knowledge and ideas of the discipline and to produce and communicate disciplinary knowledge using the language and text structures of the discipline.

Inclusion: The act of welcoming and supporting someone, in addition to removing barriers, to participate, with their full identity.

Metacognition: Thinking about thinking. In classrooms, it involves both educators and students making their thinking visible.

Morphology: How words are formed from building blocks called morphemes, the smallest unit of meaning in a word.

Motivation: The inspiration, reason or predisposition to engage in a literacy task or activity. It involves fostering intrinsic factors such as interest and self-efficacy, alongside extrinsic factors like choice, goal setting and engaging materials.

Multimodal writing: The activity and process of creating content that integrates multiple modes and resources, including linguistic, audio, visual, spatial and symbolic systems that are used for meaning-making.

Mutual trust: A shared belief in a reciprocal relationship where you can rely on each other to achieve a common purpose.

Oracy: The ability to articulate ideas, develop understanding and engage with others through spoken language.

Reading strategies: Conscious, purposeful actions taken by readers to understand, interpret and engage with texts, often involving metacognitive control over the reading process.

Reciprocal communication: A communication process that involves sending clear messages while listening to the responses of other participants, without predetermined direction or sequence.

Recursive writing: A type of writing where a writer will go back to a previous step in the writing process to see if something can be improved. It involves rethinking each step along the way and evaluating what has been done to look for ways to improve.

Representation: Instruction that builds awareness of diverse perspectives, addresses experiences of various populations, disrupts negative stereotypes and ensures that every adolescent sees themselves, their families and their communities positively, and beautifully represented.

Responsive support: Providing access to grade-level standards, texts, tasks and experiences for all students, including those with disabilities and multilingual learners, while offering robust support for growth.

Rhetoric: The art of speaking or writing effectively or to persuade people.

Transformative social and emotional learning[1] (TSEL): An approach that creates caring, just and affirming environments in schools, promoting student voice and agency, fostering well-being and dedicating time for students to make sense of their learning and experiences. Centering social and emotional learning constructs like identity, agency, belonging, curiosity and collaborative problem-solving enhances students' literacy development and engagement.

Translanguaging: The fluid and dynamic process of leveraging multiple languages to enhance communication, learning and identity. For example, a student reads a historical text in English and takes notes in Spanish.

Writing strategies: Structured series of actions (mental, physical or both) that writers undertake to achieve their goals. Writing strategies can be used to plan and set goals, draft, evaluate, revise and edit.

Introduction

> **Literacy is … a tool for daily life in modern society. It is a bulwark against poverty and a building block of development. Literacy is a platform for democratization and a vehicle for the promotion of cultural and national identity.… For everyone, everywhere, literacy is, along with education in general, a basic human right."**
>
> **- Annan[2]**

Adolescence is a time of discovery, growth and boundless potential. It is a period when young minds work to grasp the complexity of the world and explore one's place within it. Literacy and language—not just the ability to read and write, but the power to connect, grow, imagine and create—are at the core of adolescent learning.

Literacy helps adolescents form their identities, make sense of the world around them and develop agency in shaping that world. Critically, literacy also prepares them for their lives beyond school, unlocking doors to a wide range of future opportunities. Language and literacy skills are essential for career and college readiness, empowering students to explore career pathways and navigate both professional and academic landscapes.

This Adolescent Literacy Framework is tailored to the unique needs of adolescents—grades 6-12; ages approximately 12 to 18—as they transition from elementary school to middle and high school. During this transition, students navigate a variety of content areas, digital environments and social contexts. They encounter increasingly complex texts and are expected to engage in more sophisticated thinking and communication relevant to both career and higher education.

Nourishing adolescent learners in ways that lead to literacy empowerment requires the same collective commitment that we devote to our early learners. At its heart, this Adolescent Literacy Framework builds on the foundation and momentum of Oregon's Early Literacy Framework by strengthening literacy instruction and student agency in every secondary classroom. In elementary school, support is typically readily available for students who are not yet reading and writing with ease. In secondary school, however, student needs may be less readily apparent, and it may be harder for students to ask for help. A lack of literacy skills can be a source of stigma for adolescents,[3] leading to academic disengagement and lowered self-esteem.[4] By engaging with complex, career-connected texts and tasks, students gain confidence in their abilities to apply literacy skills in meaningful ways, preparing them for both careers and higher education.

This framework intends to support educators as they teach literacy skills to all middle and high school students—especially those who are not yet proficient and need to gain a sense of agency and capacity. While Oregon's Early Literacy Framework focuses on foundational skills, this framework centers on developing adolescents' comprehension and expanding their knowledge and use of reading and writing strategies. Its goal is to increase the number of secondary students who read and write with competence and confidence across content areas.

Literacy learning in the secondary grades expands beyond the language arts classroom into all classes and disciplines. Hence the term "disciplinary literacy," which describes strategies for teaching literacy skills across content areas. Each discipline has unique language and structures that students must be proficient in to engage deeply and meaningfully with the content. As students learn to navigate these unique features, they come to understand that reading and writing in one discipline or career pathway often differs from reading and writing in another. Through building literacy across content areas, adolescents become adaptable, critical thinkers who are prepared to apply literacy practices across career- and discipline-specific contexts.

Moreover, as educators teach the specific literacy practices of their discipline, students learn to envision themselves as practicing members of that field. Students reading research articles, writing scientific journal entries and closely observing the natural world, for example, begin to think of themselves as scientists. Linking literacy practices to career exploration and development helps adolescents recognize how education directly connects to their future, empowering them to envision, prepare for and thrive in a wide range of community, professional and academic environments.

> Literacy, in this framework, is not confined to the pages of books.
>
> It is alive in the conversations adolescents have, the experiences they bring, the stories they share and the questions they ask.
>
> It is about fostering a love for learning that transcends the classroom, encouraging students to think critically, express themselves creatively and bring their voices into the world around them with confidence and curiosity.

This framework supports educators in accelerating learning for adolescents and raising the quality of literacy instruction by:

- Providing evidence-based approaches to building and strengthening students' literacy skills in grades 6–12 in all disciplines, with attention to belonging and culturally responsive practices.
- Providing more specific and detailed disciplinary literacy content in language arts, math, science, social science, career and technical education (CTE), and health and physical education.
- Offering a comprehensive approach to literacy instruction that can benefit all students.
- Emphasizing the role of reading, writing, speaking and listening to enable understanding of a wide range of texts and to use these understandings to solve problems and communicate.
- Amplifying literacy practices that support core learning and critical thinking in the disciplines, while also supporting career exploration and preparation for a successful future.

Guiding Principles

Persistent opportunity gaps in the educational system necessitate a collective examination of the beliefs and mindsets that influence student learning outcomes. The Guiding Principles in this framework call for increased internal accountability and a redesign of the adolescent literacy learning experience.

The following principles anchor Oregon's Adolescent Literacy Framework:

1 Belonging, motivation and engagement are essential to adolescent literacy learning.

Motivation and engagement increase when adolescents can explore areas of focus relevant to their identities, interests and future career goals. Adolescents need to be provided with ample opportunities for choice and voice in their learning. When adolescents feel a sense of belonging, they are more likely to engage even when they are at the edge of their learning.

2 Adolescents are brimming with literacy, cultural and linguistic strengths.

School systems and instructional practices must be designed around a fundamental belief that all adolescents can become proficient readers and writers, supported by high expectations and ongoing feedback. Young people have a right to expert instruction that treats them as capable and competent, and that helps them to use existing competencies to develop the knowledge, dispositions and strategies needed for academic and life success.

3 Literacy competency is an indicator of future vitality and vibrance.

Literacy unlocks opportunities for every student to pursue their interests and be challenged within and across disciplines. Learning in social science, math, science, health and other subjects rests on strong literacy skills. Through disciplinary learning, adolescents develop specific disciplinary literacies to deepen their content knowledge and sense of self-efficacy to explore their future careers. Literacy skills gained throughout school can be applied to real-world contexts, interests and inquiries, and predict academic, career, health and civic outcomes.

4 Literacy skills and strategy instruction matter at every grade and in every content area.

Across the PreK-12 continuum and within each of the disciplines, literacy instruction must explicitly build from and expand students' foundational skills (see Oregon's Early Literacy Framework) alongside the application of vocabulary, comprehension and writing in real-world and developmentally appropriate ways. Spending time on disciplinary literacy strategies accelerates and deepens content learning and achievement outcomes.

5 A comprehensive schoolwide approach supports equitable literacy instruction.

Equitable literacy instruction is vital for preparing all students for success in college, careers and beyond. Educators are most successful at accelerating student learning when professional learning is combined with time for planning and collaboration, integrates real-world application, aligns with instructional materials, and incorporates consistent encouragement and formative feedback. A shared community vision and a commitment to the development of a culture of literacy are hallmarks of successful secondary literacy programs.

6 Multilingualism benefits everyone.

Linguistic assets are inclusive of skills and abilities developed in students' home language(s). When linguistic assets are integrated into instructional experiences, students' literacy skills and disciplinary knowledge are strengthened, leading to broadened perspectives for critical thinking and problem-solving. Culturally responsive instructional practices serve multilingual students, while also accelerating and deepening learning for all students.

7 Families and communities strengthen school-based learning and support long-term goals.

Adolescents' literacy learning is deepened when school affirms their lived experiences and when school partnerships with families, caregivers and communities further affirm their interests, language, culture and identity. Families and community partners support adolescents' postsecondary goals and model how literacy skills are used at home and in careers.

1 Disciplinary Literacy Is Essential for Postsecondary Success

"Disciplinary literacies are crucial for moving from critique to action, which is at the heart of social justice. In a time when unsupported and harmful misinformation is just a click away, apprenticing students into the ways we closely analyze content gives young people tools to shape their worlds."

- Frey and Fisher[5]

SECTION OVERVIEW

- **Disciplinary literacy.** This section defines disciplinary literacy, including disciplinary discourse, and addresses why it matters and how it supports learning within the disciplines.
- **Effective practices for developing disciplinary literacy.** The section presents two actions general education content teachers can take to engage students in disciplinary discourse:
  - Develop a sense of belonging in the disciplines.
  - Engage students in authentic and extensive disciplinary reading, writing and oral practices.

(See Section 6 for discipline-specific guidance and resources.)

In grades 6-12, students often move from class to class, taught by content and career experts. Each content area—referred to throughout this framework as a discipline—as well as each career pathway has its own approaches to reading, writing and creating knowledge.

In professional environments and higher education, disciplines like history, science, mathematics and literature convey expertise through oral communication, specialized texts and documentation.[6] Students benefit from learning to navigate these unique features and from understanding that communication in one career pathway or content area often looks significantly different from reading and writing in another.[7]

By explicitly linking literacy instruction to career pathways, educators help students see how disciplinary skills translate to real-world applications, ensuring they are well prepared for the demands of the workforce, postsecondary education and an ever-changing global society.

In classrooms that integrate disciplinary literacy practices, adolescents engage in the types of discussions, argumentation, inquiry and critique that professionals use. They learn to think and act like historians, legal experts, scientists, doctors, mathematicians, accountants, literary critics and journalists.

Disciplinary Literacy

Disciplinary literacy cultivates adolescents' ability to think, read, write and communicate like experts in a field of study. Students need to know that they read an Advanced Placement biology text or a financial analysis differently from a poem or a ruling in a court case. In other words, they learn to "speak the language" of a career or discipline.

What Is Disciplinary Literacy?

Disciplinary literacy encompasses the habits of mind, routines and practices, discourses and texts of each discipline, and frameworks that underpin a discipline's way of knowing and communicating.[8, 9, 10] It highlights the importance of understanding each discipline's distinct linguistic features, which shape the way each field builds knowledge and creates texts. Examples:

- Writing in language arts emphasizes using active verbs and vivid descriptive language to convey meaning. Such language is used in literary texts as well as journalistic and marketing texts.
- Scientific writing, by contrast, uses passive verbs and nouns formed from adjectives or verbs (nominalizations)—for example, "resist-resistance" or "analyze-analysis." Scientists, including those working as lab technicians, medical researchers or environmental scientists, use nominalization to articulate scientific concepts, formulate questions and provide precise explanations.

Engaging with disciplinary literacy practices fosters the critical thinking and analytical skills vital for informed citizenship as well as career and academic success. Adolescents benefit from interrogating texts, understanding multiple perspectives and synthesizing information within a disciplinary context.

Some theories of learning advance the idea that knowledge develops through people's interactions with one another and the world around them.[11] Thinking, acting and engaging with one another in disciplinary ways provides students with the skills and dispositions necessary to succeed in a wide range of careers, including cybersecurity specialist, entrepreneur, journalist, medical professional, engineer, community developer, artificial intelligence (AI) trainer, counselor or sustainability coordinator. (Appendix B lists evidence-based practices for integrating disciplinary literacy and career-connected learning.)

Disciplinary Discourse in Select Disciplines

- **Science:** The specific ways scientists describe and explain natural phenomena, as well as how they communicate findings and argue for conclusions based on empirical evidence.
- **Math:** The precise and logical communication of mathematical concepts, proofs and problem-solving methods.
- **Language arts:** Critical reading and textual analysis for the purpose of unearthing the deeper meanings of literary work.
- **History:** The ways historians construct narratives of the past, interpret sources and debate perspectives.
- **Art:** The specialized language and practices that artists, critics, historians and educators use, encompassing multiple communication forms, including verbal and written analysis of artworks, discussions about artistic techniques and processes, and dialogues about the theoretical and historical contexts of art.

GUIDANCE FOR PRACTICE

Support All Learners' Access to Disciplinary Literacy

- **Foster collaboration across educator teams:** Work closely with special education teachers, multilingual learner specialists and related service providers (e.g., speech-language pathologists) to enhance student success. Include CTE teachers and industry professionals in collaborative efforts to align disciplinary literacy instruction with workplace literacy demands. Ensure consistency across settings in the use of student supports and strategies.

- **Use precise language:** Clearly introduce, explain and consistently use disciplinary vocabulary, including vocabulary that students will encounter in professional settings, along with critical language features and functions. Provide time and multiple opportunities to interact with and use new vocabulary and linguistic features with both disciplinary and workplace tasks.
- **Leverage assistive technology:** Employ technology tools to help students access and engage with grade-level disciplinary literacy. The use of speech-to-text technology for writing, text-to-speech for reading and translation apps can provide equitable access to grade-level disciplinary curriculum. Explicitly teach students how and when to use these tools.
- **Use high-quality instructional materials:** High-quality instructional materials include access to grade-level standards, inclusive practices, support for teachers and students, and embedded assessments. They account for and honor the experiences of diverse learners, including educators and their varying needs. High-quality instructional materials are designed to work in coordination with educator expertise and decision-making and can thus be responsive to local context. Oregon's State Board of Education's adopted materials lists can be found on the High-Quality Instructional Materials web page.
- **Adapt materials for accessibility:** Modify curricular materials according to student needs and interests. To ensure a high level of academic rigor and career readiness, design materials to prioritize essential content, rather than watering down complex content. Introduce and gradually remove visual and verbal supports (i.e., use scaffolding) so that students experience high-challenge learning experiences that are combined with high support.
    - In science, adapt complex scientific texts to emphasize skills essential in science, technology, engineering and math (STEM) careers, like writing lab reports or preparing environmental impact summaries.
    - In history, use primary sources tailored to readability levels while focusing on constructing arguments and narratives, skills used in law, government and cultural institutions.
    - Introduce workplace-based scaffolds like templates for business emails, engineering reports or technical instructions to familiarize students with professional formats. Gradually remove these scaffolds as students become proficient.
- **Expand career exploration through disciplinary literacy tasks:** Connect disciplines to professional communication by showing students how experts in each field communicate and how this translates to professional roles. Create career-infused projects such as preparing a research proposal (science), designing a budget (math) or curating an exhibit narrative (history/art). Invite industry professionals as guest speakers to discuss how they use disciplinary literacy in their work.

Effective Practices for Developing Disciplinary Literacy

Educators guide adolescents' participation in their disciplines and potential careers, initially providing support and gradually releasing responsibility. As students internalize disciplinary norms and practices, they become confident participants in academic and ultimately professional communities. Two actions educators can take to engage students in disciplinary discourse are to:

- Build students' sense of belonging in the discipline through meaningful experiences.
- Engage students in authentic and extensive disciplinary reading and writing opportunities.

> "When students learn in an environment with belonging, consistency, and coherence, the cumulative effect is profound. These elements combine to create a powerful baseline experience for every single young person, regardless of their background, abilities, or unique needs."
>
> – TNTP[12]

Build Students' Sense of Belonging in the Disciplines

Adolescents need to see themselves as historians, scientists, mathematicians or literary critics and imagine themselves belonging and thriving in these or other careers. Students develop a sense of belonging when they feel their identity is valued. They can take risks with their learning, can participate successfully in the discipline, and are learning skills and knowledge that connect to their aspirations and matter for the future.

Educators play a critical role in building students' sense of belonging. For the greatest impact on students, educators can:

- Select texts that reflect a multiplicity of cultural experiences and connect to career opportunities.
- Review curricular materials to assess whether they need to be supplemented with culturally relevant texts.
- Provide students with opportunities to critique these texts through the lens of their cultural understandings.
- Raise students' awareness about the range of cultural approaches that exist within disciplines[13] and encourage them to critique those approaches.

Critique is central to all disciplines' literacy practices and to culturally responsive teaching. It helps students appreciate the complexity of producing knowledge within any field, recognize bias and question dominant narratives. Adolescents become adept at recognizing and questioning the cultural assumptions and power dynamics inherent in the creation and dissemination of knowledge within various disciplines when they are invited to bring their unique cultural perspectives to their learning.

GUIDANCE FOR PRACTICE

Teach Disciplinary Literacy Using Practices That Build Inclusivity and Agency

- **Science:** When inviting students to figure out the cause of a long drought, science educators may include ecological knowledge from Oregon Tribes and invite students to share how their families and communities interact with the local ecosystem. Ask students to explore heritage water use practices and discuss cultural practices related to agriculture and sustainability that adapt to and mitigate climate effects.

  When inviting students to investigate changes in ecosystems affected by forest fires or the loss of vegetated wetlands, such as marshes and swamps, science educators can incorporate ecological knowledge from Oregon Tribes. They can also encourage students to share how their families and communities connect with local ecosystems. Additionally, ask students to explore how Oregon's Indigenous peoples serve as stewards of their lands and discuss cultural practices related to restoration projects. Examples include the Camas Prairie Restoration Project of the Confederated Tribes of the Grand Ronde Community or the Spirit of the Salmon Plan, developed by the Nez Perce, Umatilla, Warm Springs and Yakama tribal leaders to restore the Columbia River watershed for the return of anadromous fish—critical to the lifeways of Oregon's Indigenous and Native peoples.

  To simultaneously help students see the relevance of science and build scientific discourse, engage students in investigating environmental issues relevant to their own communities, such as water quality, pollution or urban wildlife. Have students conduct experiments or research projects that address these issues, allowing them to apply science and engineering practices and inquiry methods to real-world authentic phenomena or problems that resonate with their cultural backgrounds.

- **History:** Ask students to explore their own family or community histories alongside the broader historical narrative. Provide primary source documents that focus on the experience of maintaining or losing traditions from different time periods and regions. Then ask students to conduct oral history interviews with family members or community elders about language, traditions, stories and recipes passed down through generations and how these elements are experienced in their communities. Students relay this information using the approaches to storytelling and rhetorical styles prevalent in their families and communities.

  Students create multimedia presentations that weave together their personal family stories with the historical context provided in class, analyzing how their personal histories fit within the larger narrative of immigration in their country. Using this approach, students engage with the discourse of history—critiquing sources, understanding context and constructing historical narratives—while affirming their backgrounds. To connect to career opportunities, collaborate with local museum or cultural professionals to develop a digital exhibition.

- **Mathematics:** In a geometry unit, engage students in exploring the mathematical concepts found in art and architecture from various cultures. Students might study the geometric patterns used in Islamic tile art, the symmetry in traditional African textiles, or the urban planning of ancient Mesoamerican cities. Encourage students to bring in examples from their own backgrounds or communities that showcase geometric principles.

Students then create their own designs or models that incorporate the geometric concepts they have learned, reflecting both the mathematical content and their cultural heritage. In the project, students engage with mathematical discourse—using terminology, understanding theorems and solving problems—within a culturally relevant and personally meaningful context. To build connections to careers, engage students in analyzing contemporary artistic design documents, architectural blueprints or development plans related to their chosen design or model.

- **Language arts:** In a poetry unit, engage students in analyzing coming-of-age poems from a wide range of poets across cultures, paying particular attention to how languages convey cultural meaning and identity. Invite students to create their own poems emulating the structure of the poetry they study, while using their own language(s).

  To conclude the unit, compile each student's poem and the poem that inspired the new poem into a digital book. To further extend the project to career opportunities such as marketing or communications, engage students in applying digital media skills by making audio or video recordings for specific audiences. Then invite the students to analyze the two poems and to offer critiques to one another.

- **Art:** In a self-portraiture unit, show self-portraits from a wide range of artists across different cultures and time periods, discussing the artistic styles, techniques and cultural contexts of each piece. Students then create their own self-portraits, using elements that represent their heritage, community, and individual experiences and identities. During the unit, teach the discipline-specific vocabulary needed to describe and analyze art, ensuring that discussions around self-portraits are grounded in the language of art critique.

  To conclude the unit, work with a local museum curator to create a self-portrait gallery. Invite museum curators or artists to support students in developing talks in which they share the cultural significance behind the choices they made in their self-portraits, fostering an appreciation for the diversity of perspectives and experiences in the classroom.

To deepen adolescents' engagement in a discipline, consider a variety of participatory models for affirming and extending youth voices as researchers of and in their schools and communities.[14] For example, introduce Youth Participatory Action Research (see Featured Resource: Youth Participatory Action Research), which centers adolescents' questions and concerns and engages them as researchers. Teach students discipline-based methods for conducting community research, thus directly integrating adolescents' interests with disciplinary knowledge.

FEATURED RESOURCE

Youth Participatory Action Research (YPAR)

"YPAR is an innovative approach to positive youth and community development in which young people are trained to conduct systematic research to improve their lives, their communities and the institutions intended to serve them."

The UC Berkeley YPAR website lays out a process for:

- Determining whether this approach is a good fit for a district, school or classroom.
- Getting started with the project.
- Investigating a problem.
- Strategizing for action.

Each section of the website offers a list of questions for planning YPAR projects and includes example projects from other websites.

Engage Students in Authentic and Extensive Disciplinary Reading and Writing

Effective classrooms begin by helping students establish authentic purposes. For example, have them read adaptive primary scientific literature to answer a question they have about a family member's health. Or have them read several primary sources to understand how past social movements made a difference today, or write testimony that showcases their knowledge of the environment to persuade lawmakers to change laws.

Reading and writing can work together to build disciplinary discourse. When adolescents read authentic texts from a discipline and compose their own, they build background knowledge, develop identities as students of the discipline,[15] and are able to share how these skills can be applied in their future careers and involvement in their communities. Using these practices in each classroom is crucial for building confident, empowered readers and writers across every discipline.

GUIDANCE FOR PRACTICE

Use Technology to Connect Disciplinary Literacy and Professional Environments

Employ technology tools to support grade-level disciplinary literacy as well as to mirror tools used in professional environments. Explicitly teach students how to use these tools in professional contexts to build familiarity and confidence. For example:

- **Speech-to-text technology:** Link its use to professions like journalism, where capturing ideas quickly is essential.
- **Data visualization software:** Introduce tools used in engineering or business analytics to connect mathematical and scientific learning to careers.
- **Digital design platforms:** Integrate professional design tools for art and design projects, linking classroom activities to creative industries.

Extensive Disciplinary Reading

Extensive disciplinary reading helps students understand "the norms and practices for producing and communicating knowledge in the discipline."[16] To fully engage adolescents, a first move is for educators to design learning that involves reading in the ways members of the discipline do.

That is, develop a culture of extensive disciplinary reading by selecting a range of texts that use language, syntax and forms of representation specific to the discipline. When choosing texts, consider how each one will help build students' understanding about the unique approaches of the discipline, how knowledge is developed and how representational forms are generated through inquiry. (See Guidance for Practice: Example of Disciplinary Reading in History and Select Texts to Support Disciplinary Inquiry and Discourse for examples of how texts can be used to support a history investigation and for considerations for selecting such texts.)

Extensive disciplinary reading involves teaching the habits of mind and practices for interpreting and synthesizing; using a range of texts for purposes core to the discipline; and explicitly teaching reading strategies that are unique to the discipline.

GUIDANCE FOR PRACTICE

Example of Disciplinary Reading in History

- **Investigate questions:** Engage students in an investigation of the question "How successful was Reconstruction?"[17]
- **Understand history as interpretation:** Help students understand that history is about interpreting the past by having them watch and discuss a video about why the history of Reconstruction is contested among historians.[18]
- **Compare and contrast interpretations:** Have students compare and contrast multiple accounts of Reconstruction, asking them to consider which primary and secondary sources each historian relied upon, whose perspectives were considered, what time periods were addressed and when the interpretations were written.
- **Interpret primary sources:** Engage students in their own reading and interpretation of primary source material to answer the question of success for themselves.

Select Texts to Support Disciplinary Inquiry and Discourse

- **Core concepts:** Select authentic texts that are relevant to the focus of instruction, including the core concepts, ideas and questions of the discipline.
- **Disciplinary language, syntax and representations:** Select texts that use language, syntax and forms of representation authentic to the discipline.
- **Authentic texts:** Select authentic texts that offer opportunities to evaluate and critique things such as reliability, relevance, reasoning, utility and credibility.
- **Reflect multiple identities and experiences:** Ensure that texts related to the core construct or idea being studied reflect multiple identities and lived experiences.
- **Connect to careers aligned with the discipline:** Introduce authentic reading materials from career fields related to the discipline like manuals, case studies and professional documents to build students' understanding of how disciplinary literacy connects with workplace literacy demands.

Science Application

In science, have students read after conducting experiments so that reading helps them answer questions they have generated. Engage students in reading adaptive primary literature related to concepts they are learning and experiments they are conducting. These are resources that are written at a more accessible complexity level but that still meet the first three criteria. To address the fourth criterion, bring in news articles or video interviews with scientists whose backgrounds reflect students' cultures and who are conducting research related to the topic. To address workplace literacy demands, include scientific reports like environmental impact statements or press releases on medical breakthroughs.

For the greatest impact on students, educators carefully sequence engagement with multiple forms and modalities of text to help build students' understanding of a core construct and the knowledge necessary to access conceptually complex, dense texts. Initially, this includes helping students expand their domain-specific knowledge. To effectively do so, engage students in the work of the discipline—for example, have them analyze figurative language, conduct experiments in science, paint a portrait or discuss historical artifacts. Used in successful classrooms, this approach helps ensure that the work of the discipline and reading within the discipline are mutually reinforcing.

Extensive Disciplinary Writing

Building adolescents' writing skills within each discipline involves engaging them in two types of writing.

The first is routine writing, which helps adolescents explore content and disciplinary concepts and practices. The second, **extensive disciplinary writing,** is more formal writing used to communicate disciplinary knowledge—findings, interpretations, proofs, solutions and the like—helping students apply concepts and tools and communicate the knowledge they gain in deep and meaningful ways.[19]

Both types of writing provide opportunities to formatively assess students' emerging understanding of core concepts, ways of reasoning and use of language. (See Guidance for Practice: Teach Disciplinary Discourse Through Reading and Writing for more information about how to integrate both types of writing with discipline-specific examples.)

Extensive disciplinary writing engages students in using writing to explore disciplinary concepts and practices; understand a discipline's purposes and audiences for writing; use disciplinary language, text features and reasoning; and compose the kinds of texts used to communicate in the discipline.

GUIDANCE FOR PRACTICE

Teach Disciplinary Discourse Through Reading and Writing

- **Science:** To build content knowledge, immerse students in the practices and discourse styles used by scientists. During a unit on cell biology, ask students to write lab reports that emulate the format and style used in scientific journals or in industry. Students conduct experiments, collect and record data, transform data into relevant data displays, and then present their findings. They learn appropriate scientific terminology after they have developed a deep understanding of the concepts.

  To further develop scientific discourse, organize a peer-review process like that found in professional scientific communities. Students critique one another's reports, providing feedback on the clarity of explanations, the accuracy of data interpretation and the strength of the evidence presented.

- **History:** To build students' understanding that history is a narrative developed through inquiry and evidence-based argumentation, focus on how historians create arguments based on evidence. During a unit on the American Revolution, have students analyze and keep notes on a set of primary and secondary sources to answer a historical question about the causes of the American Revolution or the perspectives of different groups involved.

  Engage students in a Socratic seminar or debate, where they use evidence from sources to support their arguments. During the conversation, require students to use the language of historical discourse, referencing "primary sources," "historical context," "bias," "perspective," "argument," and "interpretation." When facilitating the discussion, prompt students to consider the reliability of sources and the multiplicity of historical perspectives.

- **Mathematics:** Support students in seeing mathematics as a field of inquiry where discourse and reasoning are just as important as computation by inviting students to explain their mathematical reasoning in oral and written forms. In a geometry class, present a theorem and ask students to prove it using deductive reasoning. Students work in pairs to articulate each step of their proof, using precise mathematical language and logical sequencing.

  After completing pair work, students present their proofs to the class, defending their reasoning in response to questions from their peers. Presenting proofs deepens students' understanding of geometric principles and engages them in articulating reasoning, presenting evidence and using specific terminology crucial to the communication of mathematical ideas.

- **CTE:** CTE educators have students apply disciplinary communication strategies within their career areas—for example, by developing a business plan, sharing complicated medical information with a concerned patient, describing the safe use of equipment, creating a marketing campaign or pitching a design plan.

- **Arts:** Art educators cultivate students' understanding of disciplinary discourse through activities such as a critique session. During a unit on Impressionism, students present their work to the class and receive feedback. During these critiques, students use specific and constructive language, engage in dialogue about artistic intentions and outcomes, and consider how their peers' work contributes to or challenges the discourse.

- **Interdisciplinary:** Interdisciplinary projects build connections to careers that draw on skills aligned with multiple disciplines: critical thinking, communication and problem-solving. By highlighting how disciplines intersect in various professions—such as how engineering combines math, science and technical writing or how marketing blends language arts, data analysis and design—educators can help students see the interconnectedness of their learning and its relevance to real-world opportunities. Examples include the following:
  - Show students how historians' skills in contextualizing, corroborating and synthesizing primary and secondary sources in interpreting history mirrors the habits of mind of legal professionals interpreting case law.
  - Demonstrate for students how writing scientific abstracts reflects skills used in grant writing or research presentations.

KEY TAKEAWAYS

- **Sense of belonging.** To build a sense of belonging within each academic discipline, invite students to participate in the real work of the discipline, name and question cultural assumptions underlying the work, employ participatory research models for affirming and extending youth voice, and make connections to professions that use these skills.
- **Disciplinary reading.** To engage adolescents in extensive disciplinary reading, use a range of texts that illuminate the core purposes of the discipline and teach disciplinary habits of mind and practices for interpreting and synthesizing.
- **Disciplinary writing.** To engage adolescents in disciplinary writing instruction, engage students in using writing to explore disciplinary concepts and practices, to use disciplinary language, text features and reasoning as they write and to compose the kinds of texts used to communicate in the discipline.

LEARN MORE

Content-Area Literacy vs. Disciplinary Literacy Minilecture (video)

View and discuss this 11-minute video to understand the distinctions between content-area literacy (the general reading and writing skills described in Sections 4 and 5) and disciplinary literacy, as well as how these two approaches to literacy complement each other.

Disciplinary Literacy: Why It Matters and What We Should Do About It (video)

Gain a deeper understanding of disciplinary literacy by viewing and discussing this one-hour keynote address that features Elizabeth Birr Moje. Dr. Moje makes the argument that when students learn the literacy practices specific to each discipline, they gain access to advanced learning opportunities.

Essential Instructional Practices for Disciplinary Literacy in the Secondary Classroom

This set of resources from Michigan provides essential instructional practices for enacting disciplinary literacy practices in the classroom. Included is a set of 10 practices and guidelines that can be used by educators to support the implementation of disciplinary literacy.

Common Core State Standards, Appendix A

This resource provides a general framework for determining the complexity of a text.

Common Core State Standards, Appendix B

This resource provides exemplar texts and tasks relevant to language arts, social studies/history and science.

High-Quality Instructional Materials

This is the Oregon Department of Education's site for resources and guidance on high-quality instructional materials.

2 Creating the Conditions for Deep Learning

"Culturally responsive teaching liberates students to:

- **Find and use their own voices**
- **Engage in thinking**
- **Examine issues through multicultural perspectives**
- **Become active participants."**

— Rapp[20]

SECTION OVERVIEW

- **Belonging, motivation and engagement are necessary for rigorous learning.** This section explains culturally responsive and asset-based instructional practices for literacy and addresses the crucial importance of high expectations for all students.
- **Formative assessment is a powerful tool for improving student learning.** This section defines formative assessment and provides a formative assessment process.
- **Family and community partnerships support students' agency.** This section provides practical guidance for building students' agency by engaging families and community members.

Belonging, Motivation and Engagement

To succeed, adolescents need excellent instruction combined with a sense of belonging as valued members of the class and school community. This means recognizing the genius and persistence each student brings to their learning and demonstrating the belief that students are capable of learning, achieving and thriving academically. Students will not take risks with their learning if they do not feel a sense of belonging, motivation and engagement. When classrooms embrace these values, then students are more likely to ask clarifying questions, share wonderings and seek out support with their literacy learning.

Oregon's Transformative Social Emotional Learning (TSEL) framework—designed to support belonging, motivation and engagement—conveys five standards that support educators in creating equitable environments where every student can learn and thrive.[22] Table 1 outlines how educators can use literacy practices to enact these standards.

> "Youths need opportunities in literacy pedagogy not only to explore multiple facets of self-identity but also to learn about the identities of others who are different from them. Before getting to literacy skill development such as decoding, fluency, comprehension, or writing, students must authentically see themselves in the learning."
>
> - Muhammad [21]

Table 1. Oregon's Transformative SEL Standards[23] and Ideas for Practical Application

STANDARD & FOCAL CONSTRUCTS	PRACTICAL APPLICATION
Standard 1: Self-awareness & identity Identify and reflect upon one's thoughts, emotions, behaviors, intersectional identity[24] and capabilities across situations and environments.	Read a text or poem or examine a form of digital literacy. Have students identify the emotions, thoughts, strengths and potential of the characters. Have them discuss personal connections, as they feel comfortable sharing.
Standard 2: Self-management & agency Use management strategies to build personal and collective agency that leads to achieving goals and aspirations.	Have students identify and analyze conflict within a social sciences text. Have them discuss situations in history or current events and explore other strategies that could have yielded a different response or result. Have students act this out.
Standard 3: Social awareness & belonging Develop social awareness that fosters a sense of belonging and leads to co-constructing equitable, thriving communities and a vibrant society.	Have students collectively and/or individually, based on their interactive styles, determine how it feels to have their identities affirmed. Have them articulate how content, such as science or mathematics, can do that so all students feel a sense of inclusion and belonging. Encourage the class to hold one another accountable (including the teacher).

STANDARD & FOCAL CONSTRUCTS	PRACTICAL APPLICATION
Standard 4: Relationships skills & collaborative problem-solving Establish and maintain healthy, supportive relationships and effectively navigate diverse settings in order to collaboratively solve problems.	Have the class recall something that is unique to their culture. Discuss and connect on how one's communication and one's cultural identity may influence their perspectives and/or response to various social, verbal, physical and situational cues.
Standard 5: Responsible decision-making & curiosity Demonstrate curiosity and analysis of oneself and society in order to make caring choices that impact personal, social and collective well-being across situations and environments.	Give students various situation cards or define your expectations and have them create their own. Have students create skits or some other expression about how they might be curious and open-minded and think critically across situations, differences and environments.

Environments That Build Inclusivity and Belonging

Educators create classroom and school environments that provide access to rigorous learning and achievement for all students when they:

- Establish high expectations while providing responsive instructional support.
- Get to know students deeply on an individual basis, including their strengths, interests, backgrounds, hopes and fears.
- Incorporate culturally responsive, asset-based practices that cultivate a sense of belonging, motivation and engagement.
- Ensure relevance and opportunities for adolescents to explore how learning will impact their future selves.
- Tap adolescents' linguistic strengths, including providing opportunities for students to invent language and engage in translanguaging.

High Expectations, Responsive Teaching

> "In culturally responsive teaching, rapport is connected to the idea of affirmation. Affirmation simply means that we acknowledge the personhood of our students through words and actions that say to them, 'I care about you.' Too often, we confuse affirmation with building up a student's self-esteem. As educators, we think it's our job to make students of color, English learners, or poor students feel good about themselves. That's a deficit view of affirmation. In reality, most parents of culturally and linguistically diverse students do a good job of helping their children develop positive self-esteem. It is when they come to school that many students of color begin to feel marginalized, unseen and silenced."
>
> – Hammond[25]

When adolescents know that their educators and schools have high expectations for them, they are more motivated and positive about learning. High expectations are key in creating learning environments that adolescents find socially, emotionally and academically supportive.

To demonstrate high expectations, offer students challenging work with differentiated support. Become comfortable with productive struggle, and intentionally partner with families and community liaisons to support adolescents' acquisition of skills and knowledge.[26] Teach by centering students' academic prowess—that is, change instruction in ways that increase students' cognition,[27] provide appropriate scaffolding and cultivate every student's capacity for problem-solving, synthesis and analysis.

Educators communicate beliefs about students' capabilities through their actions, including:

- Tone of voice.
- Statements made to students.
- Depth and care of feedback provided.
- Who is called on during discussions.
- Whose experiences are validated and affirmed as valuable to the learning community.

Understanding the forms of validation that adolescents expect—especially when teachers and students hold different expectations—is critical.

Adolescents also glean implicit messages from assignments and from how students are treated in differentiated instructional groups. Assignments that reflect challenging grade-level expectations, when paired with strong instruction, signal educators' belief that students are capable. (For examples of high-challenge work, see discipline-specific assignments in Sections 1 and 6.)

High expectations paired with support that is responsive and unique to each task and student is most effective. Provide access to rigorous **grade-level instruction** by using instructional materials that encourage students' use

of metacognitive strategies and incorporate peer discussions. (Sections 4 and 5 provide guidance on teaching reading and writing strategies in ways that build on students' assets and also scaffold their learning through explicit strategy instruction.)

When educators communicate high expectations and provide supportive, asset-based feedback, adolescents come to see learning as a process where errors are expected and seen as learning opportunities. Educators make explicit, and students understand, that feedback is about learning, not about anyone's value. In such a learning environment, students experience positive outcomes such as higher grades, increased likelihood of on-time graduation, and lower absenteeism, truancy and misbehavior.[28]

Culturally Responsive, Asset-Based Practices

The purpose of culturally responsive practices is to create learning experiences and opportunities that account for students' unique assets and differences, support students' academic prowess and promote positive learning outcomes. Culturally responsive educational practices provide learning environments that foster belonging and enable adolescents to see the relevance of reading and writing and of content-area courses in their lives.[29] Educators who understand students' cultures and respect cultural differences gain insights on how to help students make connections among ideas.[30]

GUIDANCE FOR PRACTICE

Create Culturally Responsive Asset-Based Classrooms

- **Cultural frames of reference:** Use an asset-based approach to make course material relevant and increase adolescents' skill acquisition, engagement and learning outcomes.[31, 32] For example, intentionally embedding adolescents' cultural frames of reference in instruction—interests, hobbies, traditions, knowledge of the natural world, local interactive styles and communicative strategies[33]—offers ways to access new material.
- **Student choice:** Give adolescents choices in what they read and write to empower and motivate them. Offer writing opportunities that focus on relevant topics with authentic audiences. Choices can be aligned with their interests, identity experiences and aspirations, and can include opportunities related to students' cultural backgrounds.
- **Student voice:** Adolescents, like adults, desire autonomy. Invite students to shape their environment and influence decision-making in, for instance, classroom seating, composition of collaborative groups, choices of books to read and even assessment methods to use to demonstrate their learning. Encourage students to generate their own questions so that their interests, experiences, curiosities and confusions are centered and drive classroom learning.

- **Collaborative learning:** Emphasize group work and collaboration, which is an essential community value in many cultures and relevant to many careers, to allow adolescents to learn from one another's strengths through cooperative learning tasks, small-group discussion of the texts and processes used in reading and writing, and allowing students to give and receive peer feedback. Intentionally work to create safety by creating and revisiting living lists of community agreements, so that students can risk revealing what they do not yet know and share their strengths and interests.[34]

Educators affirm their commitment to honoring students' identities by selecting high-quality, culturally relevant instructional materials that reflect a variety of cultural and social backgrounds. When adolescents see themselves and their lived experiences in what they are reading and learning, increased engagement and learning follow.[35, 36] Such materials encourage students to analyze, question, critique and form their own interpretations. They offer students opportunities to think deeply and make connections to their background knowledge and experiences.

GUIDANCE FOR PRACTICE

Considerations for Selecting Culturally Responsive Materials

- **Student choice:** Do the materials include opportunities for adolescents to bring their own ideas, experiences and opinions into the work they do; to make choices in assignments; and/or to make connections to their experiences, goals, interests and values?
- **Collaboration:** Do the materials provide opportunities for educators to use a variety of grouping strategies to support collaborative learning?
- **Cultural representation:** Do the materials include diverse cultural and social backgrounds of students? Do the materials present a variety of cultures and perspectives as an asset and provide guidance on how to supplement or enhance materials to support culturally responsive pedagogy?
- **Absence of stereotypes:** Do the materials avoid inclusion of harmful biases or stereotypes that marginalize cultures, languages and lived experiences of the adolescents in your classroom community?
- **Challenge dominant narratives:** Are there opportunities presented within the materials that challenge dominant knowledge systems?
- **Cultural frames of reference:** Do the materials provide guidance to encourage educators to draw upon student cultural and social backgrounds to facilitate learning?
- **Acknowledgment:** Do the materials include opportunities for students to feel acknowledged?

Tapping Community and Cultural Literacy Approaches

The rich array of family, community, school and societal literacy practices that adolescents experience is deeply embedded in students' cultural and social identities. Students' language and literacy practices often innovatively blend traditional forms of literacy with new media and technologies, thus constantly expanding literacy forms.

Culturally Based Language and Literacy Practices

Culturally based language and literacy practices that students encounter in their everyday lives include those typical of adolescent culture as well as those that reflect deep knowledge carried forward by each student's family and cultural heritage.[37] These practices include:

- **Multilingual communication and navigating multiple identities:** In homes where more than one language is spoken, youth often code-switch between languages, translating for family members and reading, writing or speaking in multiple languages.
- **Storytelling and oral traditions:** In many cultures, oral traditions are a primary means of passing down history, language and values. Children may listen to and learn from stories told by elders in the family, which can include folktales, myths and family histories.
- **Mass media and music:** Families may consume media such as books, magazines, television and digital content in their home language or reflective of their cultural heritage. Youth may practice literacy through learning song lyrics, understanding the cultural significance of songs and discussing the messages within music. Music is a key part of most adolescents' lives. They make connections to lyrics as they explore their identities and sense of self.
- **Cultural and religious art and writing:** In some cultures, traditional art forms like calligraphy or poetic composition are important. For families with strong religious ties, literacy practices might include reading sacred texts, learning religious hymns or prayers, or participating in religious study groups or classes. Adolescents may learn and practice these as part of their cultural and religious educations. In some cultures, these cultural and religious practices may be closely held and not shared outside of the culture.
- **Literacy in daily life:** Recipes and cooking practices can be forms of literacy, as they involve reading recipes, understanding measurements and learning the techniques and terms related to culinary traditions. Managing finances, including budgeting, saving and shopping, often involves literacy practices passed down in families, including understanding the value of money within cultural contexts.

Such language and literacy practices are pivotal to how adolescents navigate and make sense of their social worlds, negotiate power relations and assert their agency. Understanding the importance of these social and cultural identities enables educators to create classrooms that draw from the experiences of all students.

GUIDANCE FOR PRACTICE

Design Learning to Build on Students' Community and Cultural Practices

- **Literacy biography:** Create a "Reading and Writing Biography" project where students share their unique linguistic and literacy backgrounds. For example, they may share languages spoken at home, favorite storytelling traditions or digital literacies. The project can culminate in a classroom gallery walk where students can learn from one another's experiences.
- **Texts from home:** Encourage students to bring in examples of texts from their home or community (e.g., recipes, religious texts, songs, digital content) within each unit taught and discuss how these texts are used within their cultural context.
- **Family and community sharing and partnerships:** Invite family and community members to share their literacy practices, skills, knowledge and resources with the class. This could include storytelling, demonstrations of traditional arts, or discussions about the importance of different literacies in various careers and professions. It could also emphasize projects that reflect the role of literacy workplace tasks and make connections between home, school and career aspirations.
- **Peer-to-peer teaching:** Host a "Literacy Workshop" where students teach their peers about a specific literacy practice they are skilled in, such as gaming literacy, social media navigation or understanding sports statistics.
- **Classroom libraries:** Expand the materials in classroom libraries to include those that represent a variety of literacy practices (including technical manuals, graphic novels and culturally relevant literature), the reading levels of adolescents in the classroom and the preferred language of students.
- **Mentorship and guest speakers:** Invite community member-professionals to share how they use literacy skills in their careers, offering students practical insights and motivation.

Tapping Adolescents' Linguistic Strengths

Inviting students to invent and explore language in the classroom centers adolescents' voices, literally and figuratively. Adolescents are active language architects,[38] often blending linguistic codes (for example, "LOL"), creating buzzwords (for example, "ghosting") and playing with language in ways that reflect their cultural, racial/ethnic, linguistic and social landscapes. As digital natives, youth adapt quickly to shifting trends and coin terms that capture the spirit of their generation.[39] Scaffold students' academic and disciplinary learning by tapping such linguistic strengths as well as drawing on their home languages, background knowledge, and cultural, racial/ethnic, linguistic and social language.[40]

GUIDANCE FOR PRACTICE

Inventing and Exploring Language in the Classroom

- **Explore linguistic trends:** Facilitate classroom discussions about current linguistic trends and slang, examining their origins and usage and how they reflect the social attitudes and identities of adolescents.
- **Notice differences in language use:** Have students keep journals where they reflect on how they use language differently in various aspects of their lives, such as at home, with friends or online, or in different classes. This can lead to discussions on translanguaging and the reasons behind different language uses.
- **Create visual representations:** Have students create visual representations of their linguistic identities, using collages that combine words, images and symbols that represent students' personal "word worlds."

To further tap students' linguistic strengths, encourage **translanguaging.** Translanguaging is a linguistic theory and practice that recognizes the fluid and dynamic way multilingual individuals move across the languages they speak.[41]

Translanguaging also refers to the process by which students leverage all their language resources to make meaning, understand content and express themselves.[42] It validates the natural way that multilingual people blend languages and language varieties in their daily lives and encourages the use of this full linguistic repertoire in educational settings to enhance learning and affirm students' linguistic identities.

Translanguaging is the fluid and dynamic process of leveraging multiple languages to enhance communication, learning and identity. For example, a student reads a historical text in English and takes notes in Spanish.

As members of many social groups, adolescents have learned to engage in translanguaging as they fluidly combine and switch between the language and literacy practices of those groups. Multilingual learners in particular practice translanguaging by fluidly combining and moving between multiple languages and language varieties. Welcome adolescents' use of their home language by structuring opportunities for them to do so—for example, by providing bilingual texts or by using American Sign Language in presentations or discussions.

For adolescents who speak a vernacular of English (e.g., African American Vernacular English), scaffold students' knowledge and expertise in the syntax and structure of their language practices to foster learning the structure of school-based English.

GUIDANCE FOR PRACTICE

Engage Students in Translanguaging Practices

- **Public display of words in multiple languages:** Create a board where students can post words and phrases in different languages that relate to the current curriculum topics, thereby creating a multilingual resource for the class.
- **Encourage use of all language resources:** Design classroom activities that encourage students to use all their language resources. For example, have students watch a content-area video in English, engage in small-group work in their preferred language and then share out in English.
- **Authentic tasks:** Assign authentic tasks, such as interviewing a family or community member about their historical or scientific knowledge relevant to the content area, to encourage students to engage in translanguaging.
- **Texts in multiple languages or dialects:** Choose books or texts that include multiple languages or language varieties and use them in reading groups, allowing students to discuss the use of translanguaging in literature.
- **Peer review:** Incorporate peer-review sessions where students can share and critique one another's work, providing opportunities for collaborative learning and the exchange of literacy practices.
- **Use of multiple languages in career settings:** Communicate with students that being multilingual is a significant asset in students' future careers, as many fields require the ability to communicate across languages and cultures. Examples include the following:
  - Healthcare professionals, such as nurses, medical interpreters or community health workers, rely on multilingual skills to provide equitable care and build trust with patients.
  - International business roles such as marketing manager, translator or global supply chain specialist depend on fluency in multiple languages to negotiate deals and navigate cross-cultural communication.
  - Technology and engineering fields benefit from multilingual engineers or developers who can collaborate with international teams and localize software or technical documentation for global audiences.

Responsive Assessment and Instruction

Educators, students and families/caregivers need meaningful and accurate information about students' learning. Singular, snapshot methods of assessment such as tests, quizzes and end-of-unit assignments can play an important role in assessing learning in secondary classrooms. But assessments that allow adolescents to demonstrate their learning and literacy skills in multiple ways and across time—e.g., through portfolio assessments, presentations or projects—are the most powerful assessment tools for improving student learning.

The formative assessment process promotes adolescents' sense of autonomy and control over the work while also helping them reflect on their learning experiences. It recognizes that student agency—that is, student choice, voice and autonomy—is critical to adolescent learning and engagement. Given the student-centered nature of formative assessment, it is important that protocols are responsive to students' backgrounds.[43, 44]

Formative assessment is "the process used by teachers and students to notice, recognize and respond to student learning in order to enhance that learning, during the learning."[45] Through this process, students and educators work together to clarify the learning needs, elicit information about the learning underway, interpret the evidence of learning, then act (take the next step in the process of teaching and learning). The following questions guide the learning process:

- Where am I going?
- Where am I now?
- Where to next?

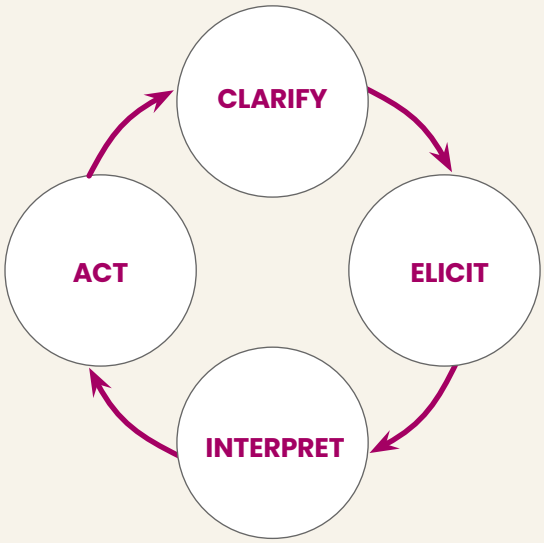
Educators support adolescents to become more self-directed learners when they invite them to examine evidence of their own learning, use metacognition and participate in meaningful peer feedback to identify what they are doing well and what they are ready to learn next.

Rubrics can be leveraged to help ensure that the quality levels and expectations are made explicit and that evaluation is fair and consistent. Importantly, the rubrics themselves need to be culturally responsive and asset-based if they are to support assessment that is more valid, appropriate, holistic and formative.[46]

GUIDANCE FOR PRACTICE

Formative Assessment Process

- **Clarify:** To begin the formative assessment process, reflect on the literacy demands of each content area and identify a specific literacy target aligned to a grade-level standard.
- **Elicit:** Collaborate with students to gather a variety of evidence to inform understanding of progress toward these targets.
- **Interpret:** Engage students in analyzing evidence of their understanding and use of discipline-specific language, ways to develop and communicate discipline-specific knowledge, comprehension of content-area texts and writing for different purposes and audience in each discipline.
- **Act:** Together decide on next steps for learning.



This planned, ongoing formative assessment process starts with clarifying learning goals, then eliciting evidence of learning and interpreting that evidence in order to understand the status of the student's learning. Based on this information, the educator and student can then act to make an informed decision about the next learning experience for the student.

Family and Community Partnerships to Promote Student Agency

Besides providing responsive assessment and instruction, educators can effectively use assessment and other key student data to establish and nurture strong partnerships with families. Sharing student academic data with families helps educators and families work in tandem to create additional support systems that bolster success and help adolescents stay on track—for graduation as well as for career and college readiness.[47]

When sharing data with families, use two-way communication channels. Work with students and families to establish clear benchmarks for success. Importantly, consider ways to elevate and amplify students' voices in communications with families. For greatest impact, educators can ask students to lead discussions about their academic progress and goals during student-led conferences and Individualized Education Program (IEP) meetings.

While these conferences are commonly held with families, the approach can be extended to include conversations with teachers, administrators, coaches, employers and college recruiters. Student-led conferences empower adolescents to assess and reflect on their learning, name their accomplishments and areas for growth, and foster a sense of ownership over their learning journey and postsecondary options.

These student-led conferences often have a powerful impact.[49, 50] Students gain confidence and tenacity. They develop valuable communication skills by presenting themselves, their achievements and their goals to a range of audiences. That sharing helps families stay informed about their adolescents' goals and aspirations and engaged in supporting their education.

> "Parents benefit from having information about key indicators—such as student attendance, growth in learning, and achievement—on which they can have an impact. These data open the door for meaningful conversations with teachers and students."
>
> - Weiss, Lopez & Stark[48]

In addition to family engagement strategies, strong and extensive partnerships with youth programs and community organizations bolster student agency and improve student outcomes.[51] Such partnerships greatly enhance schools' and educators' capacity to meet the needs of students and families. (See Guidance for Practice: Enacting Partnerships With the Broader Community for community partnership strategies.)

GUIDANCE FOR PRACTICE

Enacting Partnerships With the Broader Community

- **Community expertise:** Explore enrichment opportunities, specific skill development or work-based learning that community organizations offer and incorporate these resources into your school's literacy curriculum to enhance student learning. Invite guest speakers from community organizations to share their literacy experiences and expertise.
    - For more information, see ODE's Oregon Schools and Libraries Resource.
- **Community resources:** Conduct a community resource mapping exercise to identify local assets such as libraries, museums, community centers and businesses. Use this information to create partnerships and integrate community resources into literacy programs.
- **Student-led projects:** To promote student autonomy, creativity and engagement in the learning process, facilitate student-led projects that align with student interests and passions and invite adolescents to share outcomes with peers, their families and the school community. Consider how to provide authentic reading and writing opportunities for students, such as writing letters to local representatives, newspapers or organizations that address issues students care about.
- **Intergenerational literacy:** Many adolescents come from extended families in which generations of people live together and support one another. Hosting an intergenerational literacy event (where grandparents read to youth and youth read to younger children) brings these cultural practices into schools.

KEY TAKEAWAYS

- **High expectations.** Adolescents who know that their educators and schools hold high expectations experience greater motivation and more positive attitudes toward learning. High expectations paired with support that is responsive and unique to each task and student is most effective.
- **Culturally responsive.** Educators affirm their commitment to honoring students' identities by selecting high-quality, culturally relevant instructional materials that reflect a variety of cultural and social backgrounds and connect to career possibilities. These practices tap community, cultural and students' own linguistic and literacy strengths.
- **Assessment.** Formative assessment benefits all students, including those who have been historically and persistently marginalized by the educational system.
- **Student agency.** Educators promote student engagement by supporting student-led conferences and IEP meetings where students take the lead in discussing their academic progress and goals, as well as through forming community partnerships that expand learning opportunities beyond school walls.

LEARN MORE

Racial Equity Impact Assessment

This document provides guidance on the development of a Racial Equity Impact Assessment.

The Nonprofit Association of Oregon, Equity & Inclusion Lens Guide

The Equity & Inclusion Lens Guide is an interactive .tool that will help you learn about equity and inclusion and how to apply it to your work. The guide is broken down into five steps: consider your diversity, check assumptions, ask about inclusion, apply an equity/inclusion lens to your work, be a change agent.

Oregon Department of Education, Engaging Equity: Mindsets, Practices and Systems

This professional learning series provides information on how to access four Engaging Equity professional learning sessions. The series is for adults, with the aim to improve educational conditions for each and every student, given Oregon's changing demographics. It is not a curriculum for students.

Oregon Department of Education, Racial Equity Foundations Course

This professional learning series focuses on developing foundational self-knowledge by examining core tensions educators experience when engaging in racial dialogue. It explores implicit bias and racial identity, the dominant culture, and the intersectionality of these concepts.

Translanguaging to Support Students' Bilingual and Multilingual Development

This resource provides translanguaging strategies for educators.

Multilingualism and Translanguaging in the Classroom

This Regional Educational Laboratory Pacific video provides an overview of the benefits of multilingualism and translanguaging in schooling, including how language abilities are interconnected.

City University of New York, Translanguaging Guides

This website includes exemplars of translanguaging, organized by grade level.

OSAS Formative Assessment Online Tools

This document describes online tools available from the Oregon Department of Education (ODE) to help educators gauge their students' learning and determine next steps for instruction.

3

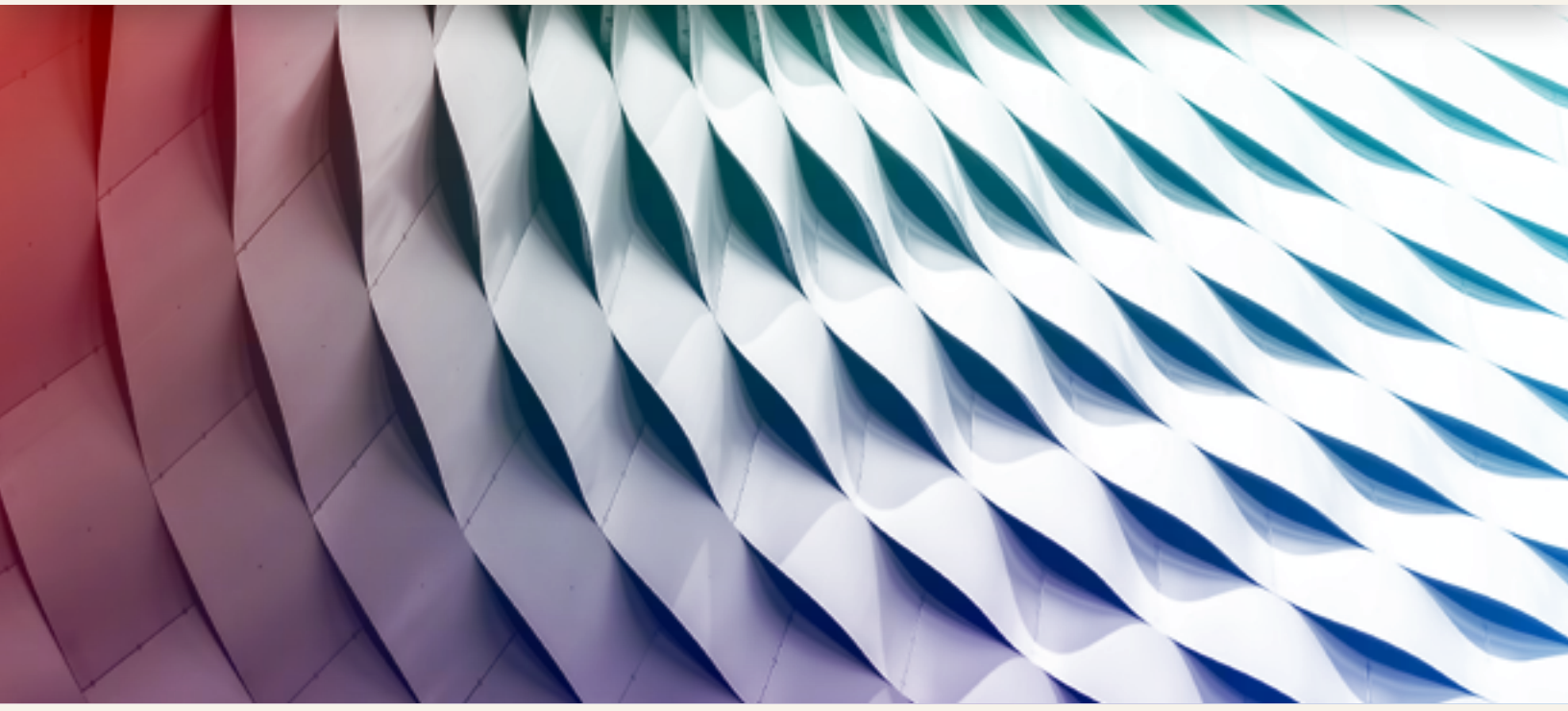
Reaching All Learners

"With universal design for learning, variations in student needs are anticipated and planned for, rather than perceived as aberrations or problems."

— Fairbairn & Jones-Vo[52]

SECTION OVERVIEW

- **Supporting multilingual learners.** This section provides guidance in supporting students identified as multilingual learners.
- **Supporting students with literacy difficulties and disabilities, including dyslexia.** This section provides guidance in supporting students experiencing disabilities.



Creating classroom environments that build a sense of belonging is necessary for all learners to engage in disciplinary literacy and learning and succeed in career and college. (See Section 2 for practices that foster a supportive and high-quality learning experience that values and integrates adolescents' linguistic and cultural backgrounds.)

Core instruction within each discipline provides critical access to standards-aligned learning experiences. Thus, the highest leverage for adolescent literacy development comes from investing in core instruction. Consistent access to core instruction—which includes engagement with discipline-specific grade-level text, tasks and talk—is also a key equity lever, improving the literacy achievement of all students in middle and high school.

This section highlights specific core instructional approaches that successful educators use to support multilingual learners and students experiencing disabilities in accessing opportunities for disciplinary literacy learning. The section also identifies supports beyond core instruction.

Supporting Multilingual Learners

Secondary students navigating the world with multiple languages, including those who speak a dialect of English valid in their communities, bring a wealth of cognitive and linguistic strengths to their educational experiences. Assets include effective protocols, interactive styles and communicative strategies that may not align with the academic English used in classrooms. Acknowledging and affirming these strengths is essential.

Providing opportunities for **multilingual learners** to build on their assets contributes significantly to their literacy growth, motivation and sense of efficacy. While it is impossible to know all there is to know about all languages, effective classrooms affirm students' additional cognitive and sociolinguistic gifts and build on what they do know about student language. This approach bridges to academic forms of English while affirming community languages.

Multilingual learners at the secondary level are entitled to comprehensive literacy and content-area instruction that considers their developing English proficiency, thus providing the same level of access to the core curriculum as their native English-speaking peers. This is mandated by the Civil Rights Act of 1964 and reinforced by the landmark Supreme Court decision in *Lau v. Nichols* (1974), which required that all public schools implement programs and services that ensure students with limited English proficiency can participate meaningfully in their education.[53, 54]

With over 190 unique languages represented in the student population in Oregon, support for multilingualism takes many forms, including bilingual

Multilingual learners speak and/or understand one or more languages. The phrase "multilingual learner" is used intentionally to promote multiliteracy and honor the process of language and literacy development and includes students who are eligible to receive English learner support services.

Note: This framework is primarily written from the lens of developing literacy for multilingual learners within an English instructional model, but with the understanding that best practice for supporting multilingual learners' literacy development is to build upon their linguistic repertoire through multilingual instructional programs.

education, integrated English language development, separate English language development courses, sheltered instruction and co-teaching.

A note of caution: The pervasive and misguided belief that multilingual learners must first demonstrate grade-level English proficiency before they can access grade-level work or texts often results in students being pulled out of core literacy and content-area instruction or assigned less rigorous tasks that reduce cognitive demand.[55] This, in turn, creates superficial access to essential content and language, leading to long-term consequences for students' sense of self-efficacy and their academic proficiency.[56, 57] The cumulative effect of limiting multilingual learners' exposure to content- and language-rich learning experiences has far-reaching harmful consequences. Taking these cautions into consideration for English dialect speakers is also crucial.

IMPORTANCE OF HIGH-QUALITY INSTRUCTIONAL MATERIALS FOR ALL STUDENTS

Oregon's instructional materials evaluation tool[58] as well as the Culturally Responsive Curriculum Scorecard Toolkit from New York University[59] are resources to support the review and evaluation of literacy curriculum materials. Each of Oregon's Student Success Plans (African American/Black, American Indian/Alaska Native, Latino/a/x & Indigenous and LGBTQ2SIA+) reference the importance of culturally responsive curriculum as part of the plan.

For additional information about instructional materials, see Section 3, The Significance of High-Quality Instructional Materials.

Supporting Multilingual Learners in Core Instruction

In Oregon, most multilingual learners develop literacy and content-area expertise within English-only instructional programs because opportunities for dual immersion and bilingual education are not yet widespread. In these contexts, it is crucial that language, literacy and content-area development occur throughout the instructional day in all content areas.

While additional instruction might be needed for students to gain academic proficiency, English language development support should not replace students' access and exposure to quality, grade-level learning. Like all students, multilingual learners need opportunities to participate in challenging academic work that is accompanied by high levels of support, promotes deep disciplinary knowledge and connections to career, and encourages higher-order thinking skills.[60]

In Oregon, the Access to Linguistic Inclusion policy[61] defines "language arts" as reading, writing and other communications in any language, including English. This expands schools' opportunities to offer course credit options for multilingual students and to recognize linguistic achievements in languages other than English. The Access to Linguistic Inclusion policy honors that literacy in any language is an asset, multilingualism is a benefit and language skills in a home language are beneficial for the acquisition of additional languages.

GUIDANCE FOR PRACTICE

Supporting Multilingual Learners[62]

- **Emphasize meaning-making:** Emphasize meaning-making across content areas, rather than focusing solely on decontextualized language skills such as spelling, pronunciation and grammatical syntax.
- **Affirm language and culture:** Build upon and affirm students' home language and cultural practices through meaningful and relevant curriculum.
- **Build metalinguistic awareness:** Provide opportunities for metalinguistic awareness by encouraging students to think about and understand how language works, thus enhancing their ability to transfer skills across languages.
- **Ensure equal access:** Ensure that multilingual learners have the same access as their peers to career and college programs, including opportunities for meeting graduation requirements.
- **Develop content knowledge and language simultaneously:** Provide opportunities for the simultaneous development of students' content knowledge while integrating language development opportunities through reading, writing, speaking and listening. Do not wait for students to be at grade-level language proficiency before providing access to rigorous content instruction.
- **Provide access to complex text:** Do not simplify text, but rather use text engineering to make text more accessible.[63]

Collaborative Teaching Models

Many Oregon school districts implement collaborative teaching models, which are designed to enhance the learning experiences of multilingual students. These models include a content-area educator collaborating with a multilingual learner specialist. They incorporate four essential collaborative practices: co-planning, co-teaching, co-assessing and co-reflecting.

Co-teaching models encompass several approaches, including models where the content teacher leads instruction while the multilingual learner specialist supports individual students and both teachers equally share the responsibility of leading instruction. Such practices not only support students by integrating language development with content learning but also foster professional growth and collaboration among educators. While incorporating these types of collaborative practices can be challenging, the benefits of these models are significant. They create more inclusive classrooms and promote shared expertise, making them a valuable component of educational programming for multilingual learners.[64]

English Language Proficiency Standards

The Oregon State Board of Education adopted English language proficiency (ELP) standards that highlight the critical language practices needed to support multilingual learners' success.[65] The standards are designed to be used by content-area educators, in collaboration with multilingual learner specialists, to support students in engaging with grade-level disciplinary language and content knowledge.[66] (See Figure 2 for a list of the English language proficiency standards organized in relation to participation in content-area practices.)

Figure 2. Organization of the English Language Proficiency Standards in Relation to Participation in Content-area Practices

Standards 1–7 involve the language necessary for multilingual learners to engage in the central content-specific practices associated with English language arts and literacy, mathematics, and science. They begin with a focus on extraction of meaning and then progress to engagement in these practices.	1. Construct meaning from oral presentations and literary and informational text through grade-appropriate listening, reading and viewing. 2. Participate in grade-appropriate oral and written exchanges of information, ideas and analyses, responding to peer, audience, or reader comments and questions. 3. Speak and write about grade-appropriate complex literary and informational texts and topics. 4. Construct grade-appropriate oral and written claims and support them with reasoning and evidence. 5. Conduct research and evaluate and communicate findings to answer questions or solve problems. 6. Analyze and critique the arguments of others orally and in writing. 7. Adapt language choices to purpose, task and audience when speaking and writing.
Standards 8–10 home in on some of the more micro-level linguistic features that are undoubtedly important to focus on, but only in the service of the other seven standards.	8. Determine the meaning of words and phrases in oral presentations and literary and informational text. 9. Create clear and coherent grade-appropriate speech and text. 10. Make accurate use of standard English to communicate in grade-appropriate speech and writing.

Source: Adapted from *English Language Proficiency (ELP) Standards*[67]

Newcomer Multilingual Learners

Ensuring that **newcomer students** are able to thrive in their new environment is a shared responsibility that involves intentional coordination and collaboration among all educators. It calls for establishing inclusive school structures and processes that welcome newcomers upon their arrival and ensure the ongoing support to enable them to meet academic standards and be prepared for career and college.

Newcomer students have recently arrived in the country and have received less than three years of education in the U.S. There are over 1,500 adolescent newcomer students in the state of Oregon.

Integrating newcomer students with still-emerging English proficiency into courses taught collaboratively by a content-area teacher and an English for Speakers of Other Languages (ESOL)-certified teacher (co-taught courses) alone will likely not provide the necessary foundational literacy skills. While inclusion in co-taught courses is meant to provide access to rigorous content-area courses, such placements should be accompanied by concurrent enrollment in dedicated English language development courses. These courses can build upon literacy in students' home language(s) to ensure that they have the opportunity to work on the development of basic English literacy, including reading comprehension and oral fluency skills.

Regardless of program type, schools must provide a comprehensive continuum of support that addresses newcomer students' immediate needs (for example, initial entry, orientation, access to rigorous academic content) as well as long-term needs (for example, successful transition to mainstream programs or postsecondary opportunities). These supports involve establishing a welcoming environment through academic assistance, language development, and social-emotional resources and ensuring that newcomer students and their families can fully participate in and benefit from educational experiences.

GUIDANCE FOR PRACTICE

Supporting Newcomers at a Schoolwide Level[68]

- **Orientation:** Provide an orientation for students and their families to learn key school processes and policies (school calendar, snow days, where and how to enter the building).
- **School records:** Analyze previous school records to determine placement and credit decisions.
- **Family interview:** Conduct a family interview with interpreters to learn more about family needs (including health, medical, academic and social).

Supporting Newcomers at the Classroom Level[69]

- **Believe in newcomer students:** They are highly capable and ready to learn and achieve high levels of literacy and content knowledge.
- **Learn pronunciation:** Take the time to learn to pronounce a student's name. Ask if it has a special meaning.
- **Encourage home language use:** Promote the use and development of home languages. (For example, encourage students to read in their home language.) Home language literacy reinforces English literacy.
- **Be consistent:** Use consistent routines and procedures.
- **Understand nonlinear nature of language learning:** Understand that language learning and literacy are nonlinear, complex and dynamic.
- **Provide dedicated instruction:** Provide newcomers with dedicated English language development instruction and ensure that their inclusion in rigorous content-area courses is paired with appropriate support.
- **Structure peer engagement:** Engage newcomer students with structured quality peer interaction.

Students With Interrupted/Inconsistent Formal Education

Newcomer students bring a wide range of cultural backgrounds, languages and unique life experiences. Some students will have interrupted or inconsistent formal education, with emerging home language literacy skills, often due to extreme living conditions, including time spent in refugee camps. Adolescents with interrupted/inconsistent formal education may need social and psychological as well as academic support. Students may be identified as Students With Interrupted/Inconsistent Formal Education (SIFE) if they have at least two fewer years of schooling than their peers, are at least two years below grade-level expectations in reading and math and are preliterate in their home language.[70]

Supporting Multilingual Learners in a Bilingual Setting

In Oregon, several program models support multilingualism and multiliteracy. Most of these programs are bilingual, emphasizing English and one other language. Some bilingual programs have a goal of promoting full bilingualism and cross-cultural awareness and provide content-area instruction in two languages. Other programs, such as transitional bilingual education programs, have a goal of transitioning multilingual learners into an English-only setting. Some secondary schools have heritage language programs[71] with the goal of maintaining, preserving and promoting students' home language and cultural heritage.

GUIDANCE FOR PRACTICE

Bilingual Programming

Regardless of the program model, bilingual programming is most successful when educators:[72]

- Integrate language and content instruction.
- Use sheltered instruction and other pedagogical strategies for bilingual learners to facilitate comprehension and promote language and literacy development.
- Use a variety of strategies to ensure equitable participation among all students.
- Use multiple strategies to promote the sociocultural competence of all students.

Additionally, effective bilingual programs use instruction that:

- Uses one language to build on concepts learned in the other language.
- Promotes metalinguistic awareness and metacognitive skills.
- Leverages students' bilingualism by strategically incorporating cross-linguistic strategies.
- Promotes awareness of language variation.

Seal of Biliteracy and Multiliteracy

The state established the Oregon State Seal of Biliteracy and the Oregon State Seal of Multiliteracy to recognize and value the languages of all students. Since its inception, the Oregon State Seal of Biliteracy has recognized students across a range of 47 different primary languages. Among these are Chinuk Wawa, Nez Perce and Umatilla, languages spoken by two of Oregon's nine federally recognized Tribes. Additionally, students who use American Sign Language (ASL) have earned the Oregon State Seal of Biliteracy.

The Oregon State Seal of Biliteracy or Multiliteracy recognizes students' abilities to read, write, listen and speak in two or more languages at an intermediate high level, according to the American Council on the Teaching of Foreign Languages standards. Students' biliteracy and multiliteracy development can happen across content areas at the secondary level, including in world language instruction or core classes offered in languages in addition to English. The Oregon State Seal of Biliteracy or Multiliteracy honors the linguistic assets of multilingual learners who were/are designated as English learners, as well as students who have learned a language other than English while in school.

Supporting Students With Literacy Difficulties and Disabilities, Including Dyslexia

All students, regardless of their disability status, are first and foremost general education students. As such, they deserve access to the general education curriculum to the fullest extent possible. Most students, including those experiencing disabilities, benefit from deep learning in the general education classroom with appropriate supports such as accommodations, adapted materials, individualized goals or objectives, and co-teaching. In some cases, students need more direct, explicit and targeted literacy interventions.

The Individuals with Disabilities Education Act (IDEA) mandates that students who experience disabilities have a free appropriate public education (FAPE) that is individualized to meet their needs. As with all students, those who experience disabilities benefit most from inclusive, student-centered and intentional instruction. When it is determined that students are eligible for special education services, they must have an IEP designed by an appropriate team that builds strong relationships with general education educators and that enables access to a free appropriate public education in the least restrictive environment. Other students experiencing disabilities may have a Section 504 plan that describes the accommodations they need to access the general education curriculum. IEPs and 504 plans help educators respond to individual student strengths and needs and foster inclusion. All educators have a legal and ethical obligation to understand and implement them.

For students with specific reading and writing difficulties, the IEP provides an opportunity for all educators to work collaboratively to set goals for literacy and identify teaching and learning supports. A student experiencing a specific learning disability such as **dyslexia** or **dysgraphia** may be eligible for an IEP if it is determined that special education is required for them to access and progress in the general curriculum.

Dyslexia is a type of specific learning disability that impacts word level reading and spelling.

Dysgraphia is type of specific learning disability that impacts written language production.

Not all disabilities impact literacy in the same way. Although reading disabilities are the most common specific learning disability, a variety of other disabilities can also impact students' literacy trajectories.

Some students do not show signs of having a disability until the secondary level. Therefore, secondary-level staff need to be aware of their legal obligation to refer and evaluate students with a suspected disability as students are identified in middle and high school.[73, 74] When educators have a concern about a student, they should collect multiple sources of data and work with their school support staff to determine next steps—ideally within the context of a tiered support model, such as multi-tiered systems of support (MTSS). The MTSS process is an evidence-based approach for all students who are experiencing difficulty in reading and writing.

In 2017, Oregon also enacted Senate Bill 1003: Best Practices for Screening Students for Risk Factors of Dyslexia and Providing Instructional Support. This legislation provides specific guidelines for screening, intervention and referral of students with dyslexia (OAR 581-002-1800).

The phrase "Core+More," used throughout this subsection, captures the central purpose of MTSS as an organizing framework designed to responsively meet the strengths and needs of all students. It highlights the importance of every student receiving strong core instruction, while also providing specific, targeted skill instruction as needed. "Core+More" describes the data-informed intensification of instruction that happens within a multi-tiered system of support.

The guidance that follows focuses on supporting students experiencing disabilities through leadership practices, integration of evidence-based practices across general education classrooms, and provision of additional support and services outside of the general education setting.

Leadership Practices

Effective school and district leadership is essential for fostering inclusive middle and high schools. Structurally, middle schools and high schools can be less conducive than elementary schools for providing targeted interventions for students in need of that support. Secondary schedules are typically less flexible. Further, secondary schools may have limited access to interventionists with expertise in supporting students with developing literacy skills. Thus, administrators may need to think creatively to design schedules that provide dedicated time for targeted interventions for students in need of that support. The following four leadership practices support strong literacy practices for all learners.

Through (1) a thoughtful approach to scheduling, for example, principals can help cultivate a school environment that values and sustains inclusive practices. Schoolwide schedules that reflect a commitment to inclusion build in intervention blocks tailored to students' diverse learning needs. They also (2) include adequate planning time for staff to collaborate effectively, develop innovative instructional practices and ensure the consistent application of interventions.

District and school leaders can (3) dedicate resources and staff time to engage collaborative teams in monitoring early indicator systems. By monitoring data such as attendance, behavior and academic progress, these teams can identify students who may need additional support early on, thereby enabling timely interventions.

Finally, district and school leaders can (4) design and support professional learning systems that provide educators with opportunities to reflect on the use of evidence-based practices and Universal Design for Learning in lesson design and examine instructional practices. Such professional learning has the potential to strengthen both literacy instruction and student learning.

THE SIGNIFICANCE OF HIGH-QUALITY INSTRUCTIONAL MATERIALS

A growing and compelling research base suggests that high-quality instructional materials can yield significant improvements in students' learning, especially when paired with high-quality professional learning that supports implementation. The work of reviewing, adopting and supporting the implementation of high-quality instructional materials is one of the most important jobs of education leaders.

High-quality instructional materials drive, inform or support all of the strategies in this framework. The importance of instructional materials for literacy extends beyond elementary and foundational skills instruction; they are also a necessary part of adolescent literacy learning. Inconsistent use of instructional materials or consistent use of low-quality instructional materials will limit or undermine the impact of strategies recommended in the framework.

High-quality instructional materials include access to grade-level standards, inclusive practices, support for teachers and students, and embedded assessments. They account for and honor the experiences of diverse learners, including educators, and their varying needs. High-quality instructional materials are designed to work in coordination with educator expertise and decision-making and can thus be responsive to local context. In addition, they support student access to increasingly complex texts and ideas, provide scaffolds for ensuring all learners can access grade-level content, and build student belonging through cultural relevance.

When educators are not provided with high-quality instructional materials and have to build their own content, wide variation between classrooms can result, along with inconsistent student access to grade-level, standards-aligned instruction.

Core/basal materials: Adopted core (or "basal") instructional materials in Oregon are subject, by law, to an evaluation process and must meet established specifications and criteria in order to be approved for use in Oregon classrooms. These criteria include indicators related to student belonging and culturally responsive practices, alignment to grade-level standards, and other discipline-specific attributes. The adoption criteria and State Board-approved core curriculum for each discipline can be found on ODE's instructional materials website.

Every curriculum on the State Board-approved adoption list meets these minimum criteria. Any adopted instructional materials should be evaluated for cultural responsiveness and adapted or supplemented to meet the strengths and needs of the classroom community.

Supplemental materials: While materials used to supplement the core curriculum are not required to be evaluated using the State Board-approved criteria, such evaluation can help educators evaluate the materials' quality. Supplemental materials include those used in the classroom in addition to the core curriculum materials used to fulfill a specific purpose, such as addressing a standard not adequately covered in the core materials.

Support in General Education

General education classrooms can support students experiencing disabilities by employing high-leverage practices—including recommendations from the What Works Clearinghouse Practice Guide: ***Providing Reading Interventions for Students in Grades 4-9***—and using the principles of Universal Design for Learning. In addition, using high-quality instructional materials provides a common foundation for schools to align their curriculum to standards and collaborate on any needed adjustments or supplementary materials. Ensuring the coherence of materials and approaches used across the support continuum helps create a connected learning experience and helps avoid "curricular chaos." (For additional information see Section 3, The Significance of High-Quality Instructional Materials.)

High-Leverage Practices

The use of high-leverage practices is an evidence-based approach for supporting the strengths and needs of students experiencing disabilities.[75] These practices rest on a robust research base that demonstrates their effectiveness, including with students who are dually identified (for example, multilingual learners with disabilities).

GUIDANCE FOR PRACTICE

High-Leverage Practices for Students Experiencing Disabilities

For supporting literacy learning among students experiencing disabilities, the high-leverage practices of collaboration among staff, data-driven planning and explicit instruction are particularly important.

- **Collaboration among staff:** General education teachers, special education teachers and support staff need to collaborate regularly to discuss individual student needs and plan for general education accommodations and support.

  General education teachers need to be familiar with students' IEPs, including their present levels of performance, goals and objectives, and accommodations and modifications. IEP-identified supports are essential to providing access to grade-level instruction for students experiencing disabilities.

  General and special education staff should meet regularly to review student progress data, discuss the effectiveness of provided supports and accommodations, and preview upcoming curriculum content for proactive planning. As much as possible, paraeducators and other support staff should be included in these conversations to ensure consistency across all service providers.

- **Data-driven planning:** Educators use an assessment-analysis-action cycle to determine which students may benefit from additional support and to match instruction accordingly. When assessing to understand student strengths and needs, educators will use multiple sources of information, including formal and informal assessments.

Students receiving special education services undergo periodic multidisciplinary comprehensive evaluations, and that data is used to inform their IEP. Both formal and informal classroom assessments are also essential tools for understanding how students are responding to the curriculum and instruction.

Assessments for students experiencing disabilities are most effective when they are goal focused. Progress monitoring tools such as curriculum-based measures are helpful tools for tracking student growth relative to specific goals and objectives.

- **Explicit instruction:** Students experiencing disabilities benefit from clear and explicit instruction that prioritizes multiple opportunities to respond with frequent feedback. At the secondary level, opportunities for students to respond might include think-pair-share, partner responses, response cards, acting out, exit tickets and drawing a map/diagram. Further, the use of modeling provides a clear example for students to observe, try with support and practice independently ("I do, we do, you do").

Many students experiencing disabilities find success in "stable, predictable, and organized learning spaces."[76] Additionally, the use of flexible grouping allows educators opportunities to provide differentiated support in the general education classroom. For example, flexible groups might be used to provide pre-teaching and/or re-teaching as well as other targeted interventions based on student need.

Breaking down complex tasks into small units and providing appropriate scaffolding allows students to find success. As they do, those supports can fade to foster independence and generalization. For reading and writing, scaffolds might include the use of graphic organizers and sentence starters.

Finally, for those students requiring additional support, educators need to intensify instruction and intervene as needed. Educators can collaborate with literacy specialists, interventionists and special education teachers to identify priority skills and concepts for students experiencing reading/writing difficulty and provide targeted instruction guided by progress monitoring.

Literacy-Specific Practices

In 2023, the What Works Clearinghouse released an updated version of ***Providing Reading Interventions for Students in Grades 4-9.*** Synthesizing the most recent research, this resource makes four recommendations that are summarized in the Featured Resource box below. Each includes multiple practical suggestions to guide instruction in reading intervention courses for adolescent learners.

It is especially important that intervention teachers play a leading role in teaching decoding (Recommendation 1) and oral reading fluency (Recommendation 2) when assessments reveal that students will benefit from additional instruction in these skills. Interventionists will also be primarily responsible for teaching related foundational writing skills (e.g., spelling, typing, sentence construction) for proficiency in order to prevent later challenges with other, more complex writing skills (e.g., translating ideas into connected text and organizing sentences for an audience).

Intervention teachers and general education teachers can collaboratively create comprehension-building practices and provide access to stretch texts. Careful communication between educators may involve general education teachers sharing the texts they will be using with interventionists, discussing which strategies to teach explicitly, and then ensuring that all teachers reinforce them, with interventionists providing additional support for vocabulary acquisition. (See Section 4 for additional guidance on how general education teachers can foster students' use of comprehension-building practices.)

FEATURED RESOURCE

What Works Clearinghouse Practice Guide: *Providing Reading Interventions for Students in Grades 4-9*

The What Works Clearinghouse Practice Guide includes four recommendations with concrete, detailed and actionable strategies to implement each:

RECOMMENDATION 1
Build students' decoding skills so they can read complex multisyllabic words.

RECOMMENDATION 2
Provide purposeful fluency-building activities to help students read effortlessly.

RECOMMENDATION 3
Routinely use a set of comprehension-building practices to help students make sense of the text.

RECOMMENDATION 4
Provide students with opportunities to practice making sense of stretch (challenging) text that will expose them to complex ideas and information.

Additional Supports Beyond Core Instruction

While all students should receive core instruction that is differentiated to address individual needs, some students may need additional learning **acceleration,** which is the support provided through targeted scaffolds to core instruction and/or a well-developed intervention program[77] (Core+More). Recent research shows the use of targeted interventions in Oregon has reduced overall special education identification and increased reading achievement for Black students.[78] The success of such intervention systems starts with understanding individual student needs through assessment practices. Importantly, it involves understanding the unique opportunities and challenges for adolescents who need additional support in a middle and high school setting.

Adolescence is a time of greater social awareness, and students with developing literacy skills can be sensitive to both self and peer perception of their needs. In particular, adolescent students with dyslexia may experience higher levels of depression and low self-esteem.[79] Thus, support is most effective when offered in a way that affirms students' strengths and minimizes

"Acceleration" is a term used to describe the range of practices for supporting students who are not yet at grade level in literacy. The goal is to allow students to engage with complex, grade level standards and instruction by offering various methods of support, such as differentiated instruction and scaffolds targeted to students' underlying gaps of knowledge. Students who are not meeting success, even with scaffolding, may also need intervention.

stigma.

As much as possible, support structures should be responsive to individual student need and preferences with the goal of building students' skills while simultaneously maintaining their dignity. For example, some students may welcome in-class support from an interventionist, while other students may prefer to receive that support outside of the primary classroom setting. Further, embedding motivation strategies within academic interventions will help increase students' confidence and engagement. (See Section 2 for more information about motivation and engagement.)

Entry into middle school and entry into high school represent notable transitions with increased academic demands. Some students may find that the strategies they have previously relied on are no longer effective, given the surge in the quantity and complexity of text they must navigate over multiple content areas. Educators should be particularly mindful of supporting students during these transition periods, since the increase in academic demands often corresponds with an increase in referrals to special education. Universal screening is a key tool to identify students who may newly experience difficulty at the middle and high school level. (See Assessment for Learning for more information about screening and using formative assessment data.)

Assessment for Learning

Formative assessment practices that facilitate ongoing feedback and instructional adjustments are especially important for ensuring prompt support for students not yet meeting benchmarks.

Engaging in formative assessment with students builds understanding of their specific strengths and needs as learners. For example, assessment tools and strategies such as informal spelling assessments, writing samples and oral reading fluency probes may be useful for certain students experiencing disabilities. Oral reading fluency checks are particularly important, due to the reduced opportunity for reading aloud at the secondary level.

Additional assessments may be needed to identify whether students who are not yet reading at grade level would benefit from reading and writing intervention, to diagnose the type and level of intervention needed, and to monitor the progress of students already receiving intervention. **Multi-tiered system of support (MTSS)**[80] models provide a structure for ensuring students access both grade-level content (Tier 1) and targeted interventions (Tiers 2 and 3).

The success of an MTSS system hinges on the availability of high-quality assessment data that identifies student needs, including:[81]

- **Screening data:** Identifies students who are not yet meeting benchmarks and thus may benefit from additional support. Several validated screeners are available for use at the middle and high school level (see Featured Resources: Assessments). Educators should draw upon existing data

A multi-tiered system of support (MTSS) is a framework for how school districts can build the necessary systems to ensure that each and every student receives a high-quality educational experience. MTSS is designed to support schools with proactively identifying and addressing the strengths and needs of all students by optimizing data-driven decision-making, progress monitoring, and the use of evidence-based supports and strategies with increasing intensity to sustain student growth.

where available. (In Oregon, the statewide English language arts assessment has a shortened test blueprint, so it is not valid/appropriate to include this information in screening data.)

The general guidance is that "if students are at grade level for these standardized group measures, intervention is not warranted. If students are behind by two or more grade levels, or if a student receives an 'at-risk' identification on a reading comprehension or comprehensive assessment, additional assessment measures are needed."[82]

- **Diagnostic data:** Identifies students' strengths and challenges so that subsequent interventions can be tailored to those skills in which a student has not yet reached proficiency. From this data, educators identify and put in place a targeted intervention to help meet student needs.
- **Progress monitoring data:** Identifies how a student is responding to a given intervention and determines if adjustments need to be made based on their rate of improvement. Progress monitoring assessments would be aligned with the student's targeted skills so that adjustments can be made based on student performance.

FEATURED RESOURCES

Assessments

- **Secondary assessment plan:** Joan Sedita's Reading Assessment Plan for Grades 5-12 is an assessment model that aligns with ODE guidance on targeted screening in the secondary grades.
- **Screening:** The Adolescent Assessment of Literacy (AAL)[83] is a free, online screening assessment of literacy skills for students in grades 3-12 developed and validated by the National Center on Improving Literacy (NCIL) with funding from the U.S. Department of Education. Students can take the assessment online and results can be used to plan targeted supports. Additional information for literacy screeners for students in grades 6-12 can be found on the National Center on Intensive Intervention's (NCII's) Academic Screening Tools Chart.
- **Diagnostic:** One example of a validated diagnostic reading assessment for students in grades 3-12 is Capti Assess, a comprehensive online assessment that can be administered in under an hour.
- **Progress monitoring:** NCII's Academic Progress Monitoring Tools Chart has detailed information on progress monitoring tools for middle and high school for reading and written expression, including spelling.

Targeted Intervention

When core instruction and targeted, strategic support are insufficient to meet a student's individual needs, then more intensified and individualized support (Core+More+More), based on progress and patterns of response, is needed. All instructional support for students with reading and writing difficulties should be provided in addition to high-quality core literacy instruction. An effective tiered instructional support plan will ensure that the right instruction is delivered with the right level of intensity and duration to the right students at the right time. For students experiencing disabilities, these interventions may be delivered by classroom teachers, special education teachers, tutors, instructional aides and/or literacy specialists.

FEATURED RESOURCE

Reading League: Five Critical Actions for Effective Adolescent Reading Intervention

1. "Alter the mindset that scaffolded grade level curricula alone is sufficient to assist older students in need of additional support.
2. "Restructure the school day to provide sufficient time for intervention and align intervention to the Tier 1 class content.
3. "Support older students with a schoolwide effort that includes more time reading in all content classes and strong intervention when data show a need.
4. "Equip middle and high school educators with the knowledge and skills to support students within content classes while also identifying and preparing interventionists to provide more focused intervention instruction.
5. "Identify and select interventions for older students that include placement guidance and mastery-type measures to monitor learning. Keep in mind that not all interventions will benefit students who need targeted support (i.e., do not use a foundational skills intervention for all students if data show some of them do not need to work on foundational skills)."[84]

Interventions should be selected based on diagnostic data determining students' strengths and needs and should be closely followed using progress monitoring data to determine if and when adjustments should be made. The NCII Academic Intervention Tools Chart[85] provides information about published intervention programs that can aid in a district's design of a continuum of academic supports.

FEATURED RESOURCES

Intervention

In addition to the NCII Academic Intervention Tools Chart, below are some evidence-based resources for targeted interventions for students experiencing reading and writing difficulty:

- **Academic language:** WordGen Weekly
- **Decoding:** Word Connections: A Multisyllabic Word Reading Program
- **Multi-component:** Strategic Adolescent Reading Intervention (STARI)

Students who are still acquiring foundational literacy skills (e.g., phonics, fluency) need corresponding explicit instruction with frequent feedback. Literacy intervention teachers can maximize access to core instruction by making connections to core disciplinary content and using content-area materials to the extent possible. For example, use decodable texts that are aligned with core content and are high-interest and age appropriate. Further, when teaching students to decode multisyllabic words, select words from core instruction. To support

fluency practice, use passages from content-area texts. In building vocabulary, teach chemistry students how to use prefixes such as "mono-," "di-," and "tri-." Similarly, use texts from language arts classes when teaching narrative text structure and literary features.[86]

Literacy interventions should make explicit the connections between reading and writing, particularly reading comprehension and written expression as discourse-level skills.[87] Understanding the relationship between reading and writing can help improve student motivation and engagement with literacy activities, particularly for students not yet meeting benchmarks.

High school age students experiencing disabilities have transition-related goals and objectives. For some students, these goals may provide a natural opportunity for targeted intervention. For example, to support a student with an independent living goal, a targeted intervention focused on writing may be used, including using a shopping list or giving short responses for a job application.

Based on progress monitoring data, interventions may need to be intensified in order to maximize student success. The Taxonomy of Intervention Intensity[88] recommends considering adjustments to the following dimensions of interventions: strength, dosage, alignment, attention to transfer, comprehensiveness, behavioral or academic support, and individualization. Once adjustments are made, progress monitoring data helps determine if the adjustments were successful in meeting student needs. In addition to the taxonomy, research has identified effective practices for intensifying reading instruction for adolescent learners.[89]

FEATURED RESOURCES

Oregon Foundational Reading Standards

Informal diagnostic tools, such as a phonics inventory,[90] can be used to determine levels of support for decoding. Students who demonstrate proficiency with both simple and advanced letter combinations do not need a word-reading intervention. This resource outlines a phonics skills progression to support successful reading.

Oral Reading Fluency Norms

Reading fluently—that is, with accuracy, speed, ease, expression and appropriate pacing—allows students to focus on the meaning of what they are reading, rather than on sounding out words. (Appendix C includes a table drawn from Hasbrouck and Tindal's 2017 research[91] that shows recommended oral reading fluency rates.)

Increasing Accessibility

Use of accessible materials, formats and technologies increases access and removes barriers for students experiencing disabilities. Multiple means of access to materials can be provided universally, for all students, not just those students with specific accommodations listed on IEPs. The National Center on Accessible Educational Materials (2024) offers four categories to describe accessibility:

- **Accessible educational materials** are print- and technology-based educational materials, including printed and electronic textbooks and related core materials, that are designed or enhanced in a way that makes them usable across the widest range of learner variability, regardless of format (e.g., print, digital, graphic, audio, video). Accessible educational materials make literacy core instructional materials accessible to all learners.
- **Accessible formats** provide the same information in another form to address the barriers text-based materials can present for some learners. Examples of accessible formats include audio, braille, large print, tactile graphics and digital text conforming to accessibility standards.
- **Accessible technologies** are the hardware devices and software that provide learners with access to the content in accessible digital materials. These technologies are designed to be flexible and provide support that benefits everyone (i.e., they are universally designed).
- **Assistive technologies** are technological systems and services that assist a student who experiences a disability to access their environment, resources or materials. Some examples of assistive technology in the literacy learning environment include text-to-speech, speech recognition and screen readers.

One framework for maximizing access to the general education curriculum based on students' learning differences is Universal Design for Learning. By recognizing students' varied profiles, this framework centers students' strengths and voices to authentically empower their participation in their learning. Three principles for personalizing education form its foundation:[92] multiple means of engagement (focused on why we learn), multiple means of representation (focused on what we learn), and multiple means of action and expression (focused on how we learn).

Dually Identified Students

Careful consideration is important to ensure that multilingual students with disabilities receive supports in both special education and English language development. Specialists working with dually identified students should collaborate closely with one another to ensure that the full spectrum of student needs is addressed. For example, multilingual learner specialists should be valued team members in IEP team meetings to provide information on student progress and program development. Administrators should work closely with specialists in each area to ensure that their schedules allow them to provide dually identified students with all needed supports.

KEY TAKEAWAYS

Supporting multilingual learners. Multilingual learners, like all students, need opportunities to participate in challenging academic work that is accompanied by high levels of support, promotes deep disciplinary knowledge and encourages higher-order thinking skills. The Oregon State Board of Education adopted a set of 10 English language proficiency (ELP) standards that work to highlight the critical language that is needed to support the success of multilingual learners.

- Newcomer students represent a diverse population, bringing a wide range of cultural backgrounds, languages and unique life experiences.
- Adolescents with interrupted/inconsistent formal education may need additional support—for example, to meet social and psychological as well as academic needs.

Supporting students experiencing disabilities. For students with specific reading and writing difficulties, the IEP provides an opportunity for all educators to work collaboratively to set goals for literacy and identify teaching and learning supports. A student experiencing a specific learning disability, such as dyslexia or dysgraphia, may be eligible for an IEP if it is determined that special education is required.

- General education classrooms can support students experiencing disabilities by employing high-leverage practices.
- Use of accessible materials, formats, and technologies increases access and removes barriers for students experiencing disabilities.
- Some students, identified through high-quality assessment data, may need the additional support provided through a well-developed literacy intervention program (Core+More). To maximize access to core instruction, literacy interventions should incorporate core content and materials to the extent possible.

LEARN MORE

US Department of Education Guidance on Assistive Technology

This "Dear Colleague" letter provides examples of AT devices for children with a variety of disabilities.

The English Language Proficiency Standards (2014) published by the Council of Chief State School Officers

The ELP Standards, developed for grades K, 1, 2-3, 4-5, 6-8, and 9-12, highlight and amplify the critical language, knowledge about language, and skills using language that are in college-and-career-ready standards and that are necessary for English language learners (ELLs) to be successful in schools.

U.S. Department of Education, English Learner Toolkit for State and Local Education Agencies (2017)

This toolkit is designed to help state and local education agencies (SEAs and LEAs) in meeting their legal obligations to multilingual learners and in providing all multilingual learners with the support needed to attain English language proficiency while meeting college- and career-readiness standards.

U.S. Department of Education Newcomer Toolkit (2023)

This toolkit is a resource for state, local and school leaders to support multilingual learners and general education educators who directly serve immigrant and refugee students.

How to Support ELL Students With Interrupted Formal Education

This article provides a profile of students with interrupted formal education, their strengths and needs, recommendations of best practices, and examples of different kinds of support that will accelerate their academic achievement.

Co-Teaching and Collaboration for Teachers of ELLs: The Role of Administrators

This slide deck provides guidance on implementing a co-teaching model.

National Center for Intensive Intervention Tools Charts

This site provides six tools charts to assist educators in selecting academic and behavioral assessment tools and interventions.

Multitiered System of Supports for English Learners

This site provides access to six briefs that provide guidance on effective instructional practices for English learners (ELs) with and without disabilities.

Six Key Instructional Practices for Accelerating Learning and Promoting Progress for Students With Disabilities

This webinar highlights six high-leverage, evidence-based practices shown to support implementation of high-quality instructional programming for students with and at risk for disabilities.

Resources for Improving Low Literacy Levels in Adolescents

This document provides resources supporting adolescents with low literacy levels.

Dyslexia in the Classroom: What Every Teacher Needs to Know

This toolkit is designed to provide classroom teachers with basic information about dyslexia, dispel some of the myths and misconceptions surrounding it, and be a resource that will increase their capacity to ensure the success of the diverse group of learners in their classrooms.

ODE's Site on Dyslexia

This site provides guidance on Oregon's dyslexia legislation.

Guidance on Screening and Instructional Support

This ODE document highlights best practices for screening students for risk factors for dyslexia and provides guidance on instructional support.

4 Teaching Reading Strategies and Skills

"We need to cultivate a new kind of brain: a 'bi-literate' reading brain capable of the deepest forms of thought in either digital or traditional mediums. A great deal hangs on it: the ability of citizens in a vibrant democracy to try on other perspectives and discern truth; the capacity of our children and grandchildren to appreciate and create beauty; and the ability in ourselves to go beyond our present glut of information to reach the knowledge and wisdom necessary to sustain a good society."

— Wolf[93]

SECTION OVERVIEW

- **Explicit instruction for teaching reading strategies.** This section outlines a general approach to instruction that can be used to teach any reading or writing strategy.
- **Three types of effective strategies for teaching reading in general content-area classrooms.** This section provides guidance on the three strategies:
  - Explicitly teach strategies for building background knowledge and vocabulary
  - Explicitly teach reading comprehension strategies
  - Provide opportunities for extended discussion of text meaning, interpretation and application.

Skilled readers in any career or content area read most of the texts they encounter quickly, accurately and often with pleasure. The reading strategies they once relied on to work through texts have become automatic.[94] But as skilled readers encounter texts that they find challenging, they turn to reading strategies.

The texts in each discipline and career present different kinds of challenges and increase in difficulty as students move through middle and high school. Thus, all educators share in the work of teaching students to apply reading strategies as part of content-area instruction. Doing so will in turn improve students' proficiency across all content areas as students become stronger readers and writers.

Ongoing instruction in **reading strategies** equips middle and high school students with the ability to understand and analyze complex texts across various disciplines, fostering content-specific knowledge, critical thinking and problem-solving skills. Explicit teaching of reading strategies to the point where students internalize them is especially important for those students who are not yet reading at grade level.[95]

Students who experience reading difficulties further benefit from **asset-based teaching and learning**[96] that allows them to "develop new identities as readers … and increased confidence for tackling new and unfamiliar kinds of texts."[97]

This section shows how explicitly teaching reading strategies in the context of content-area teaching can advance disciplinary reading, including by tapping adolescents' background knowledge.

Reading strategies are conscious, purposeful actions taken by readers to understand, interpret and engage with texts, often involving metacognitive control over the reading process.

Asset-based teaching and learning emphasizes the value of students' cultural, linguistic and personal backgrounds as resources for learning and teaching.

Explicit Instruction for Teaching Reading Strategies

Teaching adolescents to access the strategies they already use, introducing them to additional strategies, and intentionally and explicitly showing them when and how to use those reading strategies are the hallmarks of good reading instruction.[98] Teaching these skills and creating opportunities for metacognition increase adolescents' agency by building a toolbox of strategies that they can draw on in multiple contexts.

To explicitly teach additional reading strategies, educators can share with students three types of knowledge about a strategy:

- What the strategy is.
- When to use the strategy.
- How to use the strategy.[99]

Effective teaching involves explicitly introducing a strategy. Equally important is for students to have opportunities to practice using the strategy with various types of complex texts. In successful classrooms, educators gradually reduce structured supports. Students who are not yet reading at grade level not only require explicit instruction but also may need additional support as they internalize new strategies.[100] (See Section 3, Additional Supports Beyond Core Instruction.)

GUIDANCE FOR PRACTICE

Metacognitive Questions

- **What did I do? How did I do it?** Name the strategy and how it was used.
- **Where did I do it?** Point to where in the text the strategy was used.
- **How did it help me understand?** Reflect on how using the strategy supported comprehension.

To support students in accessing the strategies they already use to grapple with complex texts, successful classrooms provide routine opportunities for students to become metacognitive about and name these strategies. For example, a middle school science educator reading a news article about a scientific discovery might point out the article's date, saying, "I'm noticing this article is several years old and I wonder whether scientists have learned more about the topic in ways that could challenge the findings reported." **Metacognition** supports persistence and collaborative learning and helps students internalize new strategies.[101]

Metacognition, simply defined, is thinking about thinking. In classrooms, it involves both educators and students making their thinking about reading visible.

Effective Strategies for Teaching Reading

The reading strategies described below encompass a set of practices that can be applied across the disciplines.[102]

Three broad categories of strategies are especially critical for general education teachers to integrate into disciplinary teaching. These strategies:

- Build students' world, vocabulary and text knowledge.
- Support students' active comprehension of both print and digital texts.
- Offer opportunities for extended discussion of text meaning, interpretation and application.

Explicitly Teach Knowledge of the World and Vocabulary

Research shows that a large part of successful comprehension is building on one's prior knowledge.[103] Background knowledge and vocabulary are closely related,[104] and explicitly teaching both is an effective way to build students' reading fluency and comprehension.[105] To do this, teach brief lessons (3-5 minutes) that expand students' knowledge about the topics of their discipline and also teach the words used in the text. The two processes reinforce each other: when building background knowledge, students encounter new words; learning new words, in turn, supports students in extending their background knowledge.[106]

Different disciplines approach the order of vocabulary instruction differently. For example, science emphasizes the importance of students experiencing concepts first and then learning the vocabulary that describes the conceptual knowledge.[107] This process builds background knowledge that supports both vocabulary development and reading comprehension.

FEATURED RESOURCES

Developing World and Word (Vocabulary) Knowledge

Two recommendations from the What Works Clearinghouse Practice Guides provide additional insight into teaching world knowledge and vocabulary:

Recommendation 1 in *Improving Adolescent Literacy* (2008) outlines the following steps for teaching vocabulary:

1. Dedicate a portion of regular classroom time to explicit vocabulary instruction.
2. Use repeated exposure to new words in multiple oral and written contexts and allow sufficient practice sessions.
3. Give sufficient opportunities to use new vocabulary in a variety of contexts through activities such as discussion, writing and extended reading.
4. Provide students with strategies to make them independent word learners.

Recommendation 3, Part A in *Providing Reading Interventions for Students in Grades 4-9* includes multiple examples from different disciplines about how to build world and word knowledge. These examples include teaching vignettes that can support educators in visualizing how these strategies might play out in a classroom.

Strategies for Building World Knowledge

For the greatest impact on students' background knowledge, first find out what students already know.

To effectively expand students' world- and domain-specific knowledge, invite students to read an easier, brief passage or engage with a video clip, podcast or brief informational lecture about a topic.[108] For example, to understand the South African setting of Trevor Noah's memoir *Born a Crime*, a language arts educator might show a brief film of South Africa or photographs of South Africa from the 1980s. In the sciences, engaging students in scientists' work of collecting, analyzing and discussing data typically results in enhanced domain-specific knowledge. For example, to illustrate that global climate change is data-driven by analyzing past and present

carbon dioxide levels, educators might have students engage with a podcast or short video clip of polar research expeditions conducted on icebreaker ships, a biologist monitoring the habitat and behaviors of wildlife, or a satellite scientist examining changes in thickness or retreat of glacial ice sheets.

An additional effective approach to build adolescents' background knowledge involves having them ask and answer questions about a topic, inviting them to reflect on whether their answers helped them understand the topic, and providing feedback on when information is correct.[109] For example, educators might teach students to use the LINK strategy: *list* what they already know about a topic or concept; *inquire* about information; *note* what they have just learned; and then read and write about what they now *know* about the topic.[110]

Strategies for Expanding Vocabulary

Direct teaching of vocabulary and teaching students how to acquire new words independently are effective and complementary approaches to building word knowledge.[111] To build adolescents' vocabulary, it is important to regularly teach both "essential words" and the independent word-learning strategies most relevant in a content area. To learn new words, students first need to realize when they do not recognize a word so that they do not simply read past it. In addition, students need repeated exposure to and opportunities to use new vocabulary in conversation or writing to internalize the new word.

Two categories of strategies are essential for fluent reading and building vocabulary:

- Word identification strategies (also known as **morphology**) are moves readers make to recognize, decode and understand words in a text.
- Word knowledge strategies (also known as vocabulary) involve the understanding and application of word meanings, including how these meanings change in different contexts.

Morphology describes how words are formed from building blocks called morphemes, the smallest unit of meaning in a word.

Table 2 describes specific vocabulary-building strategies along with examples of how to teach these strategies.

Table 2. Word-Learning Strategies and Examples

WORD-LEARNING STRATEGY	DESCRIPTION	EXAMPLES
Use of morphology (word identification)	Breaking down complex, multisyllabic words into smaller units, such as prefixes, suffixes and root words, to understand their meanings.	Two strategies are especially important for students who experience reading difficulties: Teach prefixes and suffixes that commonly occur in academic text. (See the What Works Clearinghouse Practice Guide: ***Providing Reading Intervention for Students in Grades 4-9***, Resource 3A.3, p. 32.) To further support students in using this strategy, teach students how to identify the base word in a multisyllabic word, then introduce related words. (See the What Works Clearinghouse Practice Guide: ***Providing Reading Intervention for Students in Grades 4-9***, Resource 3A.5, p. 33.)
Use of Latin and Greek words	Understanding common Latin and Greek roots, prefixes and suffixes to help readers deduce the meanings of new or complex words. This strategy is particularly useful in academic reading, where such derivations are common.	Teach students to isolate Latin or Greek roots that are relevant to a specific unit in a course or that students will encounter frequently. As students encounter words using these roots, encourage them to use the roots to help determine the meanings of related words. In the context of a history or civics course, teaching the Latin root "bell-," which means "war," could help students understand words related to conflict: "antebellum," "bellicose," "belligerent," "rebellion." In science, teaching "endo" (Greek for "inside") and "exo" (Greek for "outside") can help students remember the difference between animals with endoskeletons and those with exoskeletons.
Knowledge of "essential words" before and during reading	Knowing the meaning of a wide range of words and concepts, including words specific to disciplines, and being able to use them appropriately.	When directly teaching words prior to (or during) reading, choose words that are important to learning the specific content of the discipline and that are necessary for comprehending a specific text. For example, in a CTE course focused on business management, teaching the words and underlying concepts of profit and loss will be critical to interpreting many texts. In addition to directly teaching key vocabulary words, prepare students by providing in-depth experiences with the important concepts necessary for comprehending a specific text. For example, a science course may be focused on helping students understand why cold glasses get water droplets on the outside. Before students read a text containing the word "condensation," effective classrooms first give students experience with the phenomenon and help them figure out how to explain it in their own words and home language first.

WORD-LEARNING STRATEGY	DESCRIPTION	EXAMPLES
Use of context clues to determine meanings of unknown words	Using words, phrases and sentences surrounding an unfamiliar word to infer its meaning. In other words, using the context of the passage to determine the meaning of the word.	Teach students to underline words that they do not know. Have students reread the sentence where they encountered the word. If the sentence does not help them understand the word, then reread the sentence around the word to look for clues.[112] The What Works Clearinghouse Practice Guide: ***Providing Reading Intervention for Students in Grades 4-9*** includes two vignettes to demonstrate this practice in action. The first illustrates what a teacher model looks like (Example 3A.3, p. 27). The second shows what it looks like when a teacher guides a class through using context clues to define a word (Example 3A.4, pp. 27-28).
Semantic knowledge	Understanding the various meanings a word can have, depending on context.	Teach students to recognize that words have multiple definitions and that words may be defined differently in science than in other disciplines or everyday language. Using context clues can support students in figuring out which meaning the word has. For example, when students in a physical sciences class encounter the word "mass," students may bring multiple meanings (a religious service, widespread appeal or a large body) that could either help or interfere with understanding the reading. Using context clues can help eliminate unlikely meanings, such as a religious service or widespread appeal.
Using other resources to determine meanings of unknown words	Using resources available, such as online dictionaries or thesauruses, or asking other people.	Teach students to use these common resources after working through other word-learning strategies. Teach multilingual learners to use translation apps or bilingual dictionaries purposefully, effectively and efficiently. It is critical to teach students that translation apps can provide incorrect translations and that they need to discern when and how to use these tools.

Building on Students' Linguistic Assets

To build on students' linguistic assets, encourage them to analyze their authentic use of language. For example, if a student frequently uses slang terms, encourage the student to compare and contrast those terms with more formal English and to explore the nuances of different types and styles of language. This analysis (also known as metalanguage practice) can lead to broader discussions of how language is used for different purposes.

Additionally, introduce the concept of **cognates**—words that look similar and have the same meaning in two languages. For instance, the English word "family" and the Spanish "familia" are cognates. Teaching students to identify and use cognates (and recognize false cognates) can significantly support their reading development and strengthen connections between English and their home languages.[113]

Cognates are words in two languages that share a similar meaning, spelling and pronunciation. For example, many English words have a related word in Spanish.

Explicitly Teach Comprehension Strategies

Comprehension is the cornerstone of effective communication and meaningful learning. The ability to deeply understand and process information is essential for success in any field. To access the important knowledge and insights embedded in each content area, students need to actively participate in the process of comprehension.[115] Challenging texts are necessary when teaching comprehension. If texts are too simple, students will not need to use strategies to build their understanding.

The act of comprehension is complete when readers use what they understand to do something—"tell a story, explain a situation, argue with an author or a classmate, or maybe even plan to change the world."

- Pearson and colleagues, 2020[114]

GUIDANCE FOR PRACTICE

Choosing Texts for Teaching Comprehension Strategies

- **Challenging:** Use challenging texts that offer multiple opportunities to apply the strategy being taught.[116]
- **At or near grade level:** For students who have not yet reached proficiency in grade-level reading standards, challenging texts will likely be just at or just below instructional level.[117]
- **Above grade level:** Students who are already reading at grade level will also benefit from explicit comprehension instruction when learning grade-level skills, like close reading, or texts that stretch above grade level.

For the greatest impact when teaching high-leverage strategies for comprehending texts, use the explicit instruction processes outlined earlier in this section.[118] In addition, encourage students to ask and answer the three metacognitive questions outlined above (see Guidance for Practice: Metacognitive Questions) to reinforce the idea that the purpose of learning strategies is to understand the content of the text.[119] Specifically, effective classrooms provide opportunities to use three types of comprehension strategies (each described in more detail below):

- Use of comprehension monitoring and "fix-up" strategies.
- Accessing of prior knowledge and establishment of reading purposes.
- Use of active comprehension strategies, including recognizing common text structures and features, that support different levels of understanding.

Comprehension Monitoring and "Fix-Up" Strategies

The first step toward greater comprehension for many adolescents is helping them be aware of their understanding (or misunderstanding) of material as they are reading. Then teach students a set of "fix-up" strategies—specific actions that strategic readers take to clarify or repair understanding.

GUIDANCE FOR PRACTICE

Teaching Monitoring and Fix-Up Strategies

- Teach students to pause at intervals in their reading to assess their level of comprehension and recognize when they do not understand points or the material.
  - Does this make sense?
  - What was that section about?
  - What does the author mean by that?
- Encourage students to use common fix-up strategies (listed below) as well as word-learning (Table 2) and comprehension strategies to improve understanding. Some common, high-leverage fix-up strategies include:
  - Rereading the text or selection of text that they did not understand.
  - Reading ahead and returning to problematic text.
  - Adjusting reading speed.
  - Restating or paraphrasing previously read text.
  - Using lookups (e.g., dictionary, thesaurus) and/or seeking external help.
  - Abandoning text if it is not what they need (e.g., reading for specific information).
- Model monitoring and fix-up strategies while reading aloud to students, intentionally stopping to make visible to students the processes being used when comprehension breaks down. For example, stopping and saying, "I realized that I've read two paragraphs, and I'm not sure what I just read. I'm going to go back and reread that section more slowly and write a gist statement."

Prior Knowledge and Reading Purposes

Two comprehension strategies explicitly build on students' assets and support their engagement in reading: accessing prior knowledge and setting a reading purpose.

Surfacing students' background knowledge prior to and during reading supports them both in comprehending text and in using additional reading strategies.[120] When introducing a text about new topics or concepts, have students pause and identify what they already know. Because students sometimes have partial understandings or even misunderstandings about a concept, educators play a critical role in helping students monitor how their understanding of a concept changes. Offering students opportunities to write to the following prompts before and after reading creates lasting impact over time:

- My ideas about [the topic, idea or concept] before reading.
- Revisions to what I wrote above that wasn't quite right (cross out or adjust wording).
- Additional ideas I got from the reading.[121]

Having students identify their reading purpose helps them choose strategies that are consistent with the task and builds motivation.[122] For example, if students in a social science class are reading articles that offer a range of perspectives on a public policy issue, establish clearly that students are reading these to form their own opinions and argue in support of them for an upcoming classroom debate.

Provide scaffolding by offering guided questions to help students navigate the text and identify significant content supporting learning goals. Integrate key reading strategies throughout the process, such as identifying main ideas and summarizing sections of text, identifying potential evidence, and skimming and scanning articles to determine whether they are useful in helping students form their opinions.

Naming background knowledge and establishing a reading purpose encourage students to engage more deeply with the material while reinforcing literacy skills, enhancing comprehension and promoting critical thinking.

Table 3. Strategies for Accessing Prior Knowledge and Setting a Reading Purpose

READING STRATEGY	DESCRIPTION	EXAMPLES
Activating and accessing prior knowledge	Prior to and during reading, identifying and accessing information from experience—either lived (directly experienced) or vicarious (experienced by way of a movie, podcast, book/website, story, etc.).	To teach students to access prior knowledge during reading, model briefly (1 or 2 minutes) how accessing prior knowledge helps them. Then invite students to make their own connections. For example, a language arts educator may read the first two lines of a poem and note connections made to personal memories, other poems or literary allusions. A physics educator models how they interpret a force and motion graph, pointing out the labels on the X and Y axes and units of measurement. The educator then asks students to identify other features of the graph that build understanding or raise questions.

READING STRATEGY	DESCRIPTION	EXAMPLES
Setting a purpose for reading	Identify a particular purpose or a familiar goal (such as reading for pleasure, to find specific information, for general information, to answer a test question, to read the Bible at home, to make shopping lists) and use strategies to support reading for that purpose.	Educators can both provide reasons to read and help students identify their own authentic purposes for reading. To do this, facilitate a discussion about why students read and create a classroom list of reasons that students can add to.[123] For example, a language arts educator begins a lesson by asking their students, "Why do people read?" During a brainstorming session, students share reasons like learning, entertainment or stress relief. The teacher compiles students' responses on a classroom poster titled "Our Reasons for Reading" and leaves space for students to add new ideas throughout the year, encouraging them to continuously reflect on their personal motivations for reading.

Active Comprehension Strategies

These can be applied before, during and after reading to enhance understanding, retention and critical reading of any text.

FOUR LEVELS OF COMPREHENSION

- **Literal comprehension:** The author explicitly states what readers need to know. Readers then recall what they read.
- **Inferential comprehension:** Authors often leave out information that readers need. Readers must use what they know (from reading or experience) to "fill in the blanks" or predict.
- **Evaluative comprehension:** Authors compose texts that they may or may not be qualified to write. Further, authors may or may not agree with others who write about similar topics or concepts. Readers are required to make critical evaluations of text, based on what they already know about the topic, concept or discipline; what they have read/learned before; and the qualifications of the author or source.
- **Application of comprehension:** Readers decide how to use what they have read. They ask themselves: How do I use this text? What actions should I take now that I know what I know?

Teaching active comprehension strategies and providing students with opportunities to apply them to print and digital texts in a hypermedia environment[124] support all four levels of comprehension. Moreover, students who are not yet reading at grade level especially benefit from learning the three practices outlined in Featured Resource: Three Go-To Comprehension Building Practices as they build their literal and inferential comprehension.

FEATURED RESOURCE

Three Go-To Comprehension Building Practices[125]

Recommendation 3, Parts B-D in *Providing Reading Interventions for Students in Grades 4-9* (p.37) identifies three comprehension-building practices, accompanied by multiple illustrative examples:

- "Consistently provide students with opportunities to ask and answer questions to better understand the text they read.
- "Teach students a routine for determining the gist of a short section of text.
- "Teach students to monitor their comprehension as they read."

GUIDANCE FOR PRACTICE

Teaching Four Types of Comprehension

Literal Comprehension

Teach students a routine for creating a gist statement for a short (one- to two-paragraph) section of text. Resource 3C.1 in *Providing Reading Interventions for Students in Grades 4-9* (p. 48) recommends a five-step process:

1. Identifying and marking the most important person, place or thing.
2. Marking and then listing important information about that.
3. Synthesizing the important information to create a gist statement.
4. Writing the gist statement in the student's own words.
5. Checking that the gist statement includes all the important information.

Teach students to develop summaries of longer texts using text structures and features to organize the summary. For example, a health sciences CTE educator has students read about the procedures that medical personnel use when intaking patients and then create sequential summaries of those procedures.

Inferential Comprehension

Teaching students to ask and then answer questions about a text, using a strategy like Question-Answer-Relationship (QAR), helps students develop inferential understanding. Two types of QAR questions are particularly helpful for developing inferential comprehension:

- **Pulling it together:** Synthesize information from across a longer text.
    - How are Janie's husbands in *Their Eyes Were Watching God* similar to and different from each other?

    - How did the research design and experimental procedures allow medical researchers to draw conclusions about the effects of the vaccine?
- **Text + me:** Use information from the text and from the reader.
    - What is the theme of *Their Eyes Were Watching God*?
    - Were the gains of the Industrial Revolution from the late 18th to the late 19th centuries worth the pain that was caused to working-class people?[126]

Teach students to use text features (see Table 5 for common text features) to draw inferences across sections of texts.

Evaluative Comprehension

General strategies for evaluation include examining authors' qualifications and background, evaluating credibility of sources, and comparing and contrasting approaches of other authors.

Determining credibility of digital sources can be particularly challenging and important.[127] Judging credibility involves "reading laterally" (e.g., opening additional tabs to investigate)[128]—that is, leaving a site or platform to investigate considerations such as:

- Perspective and motivations of an organization or individual posting information.
- Qualifications of an individual to make claims.
- Where and when images were taken.
- Whether images have been digitally altered.
- Whether something is an advertisement.
- Who funded research that is being reported.

Many strategies that support evaluative comprehension are discipline-specific and focus on considerations such as research methods, strength of the evidence, replicability of the research and the like. (See Section 6 for more information about teaching literacy in specific disciplines.)

Application of Comprehension

Have students ask additional questions about concepts covered in class—those that they find interesting or difficult to understand but that are not elaborated upon within a text or lesson.

- To build adolescents' sense of agency, give students time to conduct research using digital texts and find the answers on their own.
- Guide students in identifying and evaluating the relevance and credibility of digital content.

Discuss factors such as how to recognize advertising or sponsored content on news websites, distinguish between legitimate and dubious sources, evaluate the content on which social media posts are based, and use lateral searching to verify the funding, perspective and credibility of sources.

Helping students know what to expect in a text often improves their understanding of the content. Effective classrooms help students anticipate what is coming by teaching common **text structures** and **text features**. Because text structures and features are specific to each discipline, educators play a critical role in helping students understand how texts in their disciplines work (see Section 6). Graphic organizers help scaffold comprehension learning for students experiencing disabilities. For example, each type of text structure can be shown as a visual representation in which students can organize their thoughts (e.g., Venn diagram for compare/contrast).

In addition, digital texts typically employ a nonlinear structure that includes hyperlinks to other media; students benefit from learning additional strategies for working with them. For example, comprehension can be enhanced when students learn to make strategic decisions about whether or not to follow hyperlinks within an article or on a website.[129]

Text structures are the typical ways texts are organized in a discipline. For example, cause/effect is a structure used in both social science and scientific explanations. (See Table 4 for common text structures.)

Text features are components typically included in discipline-specific and career-specific texts. For example, mathematical, medical and physics texts often include graphs and equations. (See Table 5 for common text features.)

Table 4. Common Text Structures

TEXT STRUCTURES	DEFINITION
Chronological/sequence	Events or steps are presented as they occur in time.
Comparison/contrast	Similarities and differences are outlined between two or more disciplines.
Cause/effect	The reasons something happened and the resulting consequences are explained.
Problem/solution	A problem is described, followed by one or more solutions.
Description/list	A topic is detailed with characteristics, features and examples.
Spatial/geographical	Information is organized based on physical layout or geography.

Table 5. Common Text Features

TEXT FEATURES	DEFINITION
Headings and subheadings	Indicate main topics and subtopics, guiding the reader through sections. In digital texts, readers can often use these to navigate between sections.
Bullets and numbering	Used for lists, these highlight key points or steps in a process.

TEXT FEATURES	DEFINITION
Tables, charts and graphs	Present numerical data or information in a visual format for easy comparison, representing trends.
Maps	Show geographical data relevant to the content.
Images and captions	Provide visual representations of text content with explanatory captions.
Images and captions	Glossary, index, table of contents and so on. In digital texts, these features may be hyperlinked to allow readers to navigate to other information.
Additional information	Contained in footnotes and endnotes, sidebars, highlighted words (bold, italicized and underlined), and hyperlinks.

GUIDANCE FOR PRACTICE

Teaching Text Structure

Guide students through an understanding of text structures and text features through activities like these:

- Having students find examples of text features in classroom materials during text feature scavenger hunts.
- Assigning writing projects that require students to use specific text structures or include certain text features.
- Incorporating digital texts in lessons so students can compare/contrast text features across printed and digital texts.

Using Oracy to Provide Opportunities for Extended Discussion

Oracy is integral to fostering students' comprehension and critical thinking skills.[130] Oracy emphasizes the importance of using the language of disciplines and careers in order to build deeper meaning. Effective oracy practices encompass both learning to talk (for example, as a scientist) and learning through talk, which involves both speaking and active listening.

Effective classrooms embed opportunities for structured discussions in order to reinforce the essential connection between oracy and reading

Oracy is the ability to articulate ideas, develop understanding and engage with others through spoken language (Gaunt & Stott, 2018).

comprehension. Facilitating discussions of complex texts not only builds literal comprehension but also supports students in drawing inferences, evaluating texts, and applying what they learn from reading. Although helpful for all learners, incorporating oracy practices into content-area courses is especially beneficial for students whose English proficiency is still developing.

GUIDANCE FOR PRACTICE

Facilitating Discussions to Build Reading Comprehension[131]

- **Step 1:** Educators select texts and topics that stimulate multiple interpretations, are ambiguous or may be controversial. (To prepare, develop discipline-specific questions that prompt students to make high-level inferences.)
- **Step 2:** During whole-class discussions, educators ask follow-up questions to encourage students to elaborate their thinking and make connections across texts or learning experiences.
- **Step 3:** During small-group discussions, educators provide routines and processes for students to follow. These outline roles that students play within small groups, while the educator circulates in the room.

Note: By following protocols, students internalize the process.

Discussions enhance students' ability to effectively listen and share their thoughts as they collaborate to build and deepen their understanding of complex texts. The Improving Adolescent Literacy practice guide emphasizes the kinds of discussions that are especially helpful to adolescents:

> "Discussions that are particularly effective in promoting students' comprehension of complex text are those that focus on building a deeper understanding of the author's meaning or critically analyzing and perhaps challenging the author's conclusions through reasoning or applying personal experiences and knowledge."[132]

GUIDANCE FOR PRACTICE

Creating the Conditions for Discussing Complex Texts

To successfully engage students in rich, text-based discussions that result in rigorous learning, educators create supportive classroom environments characterized by regular student-to-student talk.

- **Relationships:** As an essential foundational step before disciplinary discussions begin, build relationships among students and between students and the educator by providing opportunities for each person, including the educator, to share information about who they are and where they are from. For example,

students and their educators could build and share a playlist, explaining how it represents them.[133] Encourage students to lead a discussion about a particular song or lyric that stimulates multiple interpretations.

- **Community agreements:** Engage the class in establishing community agreements by asking students to reflect individually, with a partner and then with the whole class about what helps them to share in class. Educators might ask questions such as "What makes you comfortable in a classroom? Uncomfortable?" or "What are some things that classmates can do to support one another's learning?"[134] Use students' authentic language, including students' home language, to record these agreements.
- **Encourage students to engage in translanguaging during discussion:** Design classroom activities that encourage students to use all their language resources. For example, have students read a content-area text in English, engage in small-group work in their preferred language and then share out in English.
- **Sentence frames:** Provide sentence frames to facilitate academic conversation and encourage students to refer to the text being discussed. "When I read … on page xx, I wondered …" or "I agree with your idea that … and I would like to add …"[135] Over time, gradually reduce the use of sentence frames as students become comfortable building on one another's ideas.
- **Student to student:** Encourage students to respond to one another rather than to the educator. In addition, build in small-group interactions that require students to talk with one another. For example, incorporate peer-review sessions where students can share and critique one another's work, providing opportunities for collaborative learning and the exchange of literacy practices.

KEY TAKEAWAYS

- **Explicitly teach reading strategies.** Teach students declarative (what), procedural (how) and conditional (when/why) types of knowledge related to each reading strategy. Provide sufficient practice so that students internalize the strategies.
- **Be aware that explicit strategy instruction is especially important for students who are not yet reading at grade level.**
- **Build metacognitive awareness.** Teaching students to be metacognitive about their reading helps them recognize when they are stuck and consciously access strategies when they encounter difficult text.
- **Teach three types of reading strategies in the context of discipline-specific content.**
  - Build adolescents' world, vocabulary and text knowledge.
  - Support adolescents' active comprehension of both print and digital texts by teaching high-leverage comprehension strategies along with text structures and features.
  - Offer opportunities for extended discussion of text meaning, interpretation and application.

LEARN MORE

[What Works Clearinghouse Practice Guide, *Providing Reading Interventions for Students in Grades 4-9*]

This practice guide details four evidence-based practices designed to be used by teachers, coaches and administrators to improve reading among students with reading difficulties.

[Reading Instruction for Middle School Students: Developing Lessons for Improving Comprehension]

This guide is designed for educators and provides detailed information about some of the lesson plans used in Tier 2 intervention for struggling readers in middle school.

[All About Adolescent Literacy]

This resource is designed to help educators further understand the research on adolescent literacy and provide some practical advice on infusing reading and writing skills in instruction.

[De-Mystifying Complex Texts]

This resource defines complex texts and identifies how can we ensure that multilingual learners can access them.

[Making Complex Texts Comprehensible]

This resource provides strategies for making complex texts comprehensible for multilingual learners.

[Reading Apprenticeship]

This website describes Reading Apprenticeship, an evidence-based framework and approach to professional learning and classroom instruction that uses metacognition and extensive reading to integrate four dimensions of literacy learning in the disciplines: social, personal, cognitive and knowledge building.

[Tips for Educators of ELLs: Reading in Grades 7-12]

The tips offer some great ways to help regular and newcomer multilingual learners become confident and successful readers.

[Evaluating Information: The Cornerstone of Civic Reasoning]

This resource provides findings of a study that includes samples of our assessments of civic online reasoning.

5 Teaching Writing Practices and Strategies

"Writing is essential to communication, learning, and citizenship. It is the currency of the new workplace and global economy. Writing helps us convey ideas, solve problems, and understand our changing world. Writing is a bridge to the future."

— The National Writing Project[136]

"Words mean more than what is set down on paper. It takes the human voice to infuse them with shades of deeper meaning."

— Angelou[137]

SECTION OVERVIEW

- **Effective practices for teaching writing.** This section outlines four high-leverage practices for teaching writing:
  - Opportunities to consider the purpose and audience for writing through analyzing exemplar texts.
  - Explicit teaching of writing strategies that support the writing process.
  - Use of talk and collaboration as students draft and revise writing.
  - Effective and ethical use of digital tools, including AI, to support writing.

Writing, alongside talking, is how we communicate the language in our minds to others. Writing not only enables adolescents to express their identities, ideas, hopes and dreams but also supports their capacity to learn and develop knowledge in all disciplines—in school, in the world of work and in civic life. Learning to write well—an essential life skill even in the age of generative AI—requires instruction.

As adolescents move through middle and high school, they encounter opportunities to write for many purposes and audiences: recording observations during experiments, developing explanations of scientific phenomena, drafting technical manuals for computer applications, creating poetry and memoirs, and crafting arguments about solutions to current local, national or global issues. Because writing is specific to each discipline and career pathway, all educators play an important role in developing students' writing ability.

Accomplished writing educators use a set of evidence-based practices to support students' development as writers of both print and **multimodal texts.**[138] Key effective practices that benefit all middle and high school students (each described in more detail below) include:

- Opportunities to consider the purpose and audience for writing through analyzing exemplar texts.
- Explicit teaching of writing strategies that support the writing process.
- Use of talk and collaboration as students draft and revise writing.
- Effective and ethical use of digital tools, including AI, to support writing.

Multimodal texts include the purposeful use of linguistic (words, phrases, sentences) and nonlinguistic (visuals, sound, symbols) elements to deliver a message.

Weaving these practices together fosters adolescents' agency and independence. Providing students with opportunities to make choices about topics, audiences, purposes, strategies and tools increases motivation. (Appendix D provides additional guidance on models that support adolescent writing development.)

Opportunities to Consider the Purposes and Audiences for Writing

To help students learn to communicate effectively in writing, teach them to write rhetorically—that is, effectively and persuasively—using exemplar texts. It is critical that students learn to consider three key elements of writing rhetorically:

- Identify their own purposes for writing.
- Learn about their readers' interests, knowledge and concerns, including cultural nuances, that may shape readers' interpretations.
- Determine how they can tailor their messages to both achieve their own purposes and meet the needs of their audiences.[139, 140]

Tailoring messages to audience is a primary skill that employers seek in employees. In effective classrooms, educators provide students with examples that illustrate how important this skill is, not only in school but in their lives, relationships and future careers.

Rhetorical considerations are also relevant in each discipline and for both traditional print and multimodal texts.[141] For example, scientists write journal articles to publish the results of their research (writer/purpose), so that other scientists in their specialty (audience) can replicate, critique and build on their research (message). Scientific articles use language and features that other scientists in the same field expect (audience): technical language, such as nominalizations, as well as text features including graphs, citations of prior research and illustrations of models.

GUIDANCE FOR PRACTICE

Teaching Writing Rhetorically—Science Example

In a biology unit about the reduced algae growth in a local river, engage students in comparing and contrasting how opinion editorials and an environmental impact report describe the impact of removing dams on the Klamath River. Use texts, including videos, that include different perspectives, such as those of the Klamath Tribes of Oregon, commercial farming interests and regulators. When comparing these texts, ask students to:

- Identify similarities and differences in the authors' choices about language, text structure and genre.
- Infer each author's purpose and audience.
- Consider the backgrounds of the authors.

As a culminating activity, have students write up the results of an investigation related to hydrology in two ways: as a scientific report and as a public-facing explanation or opinion editorial. For each type of writing, ask students to consider their purpose, who their audience is and what the audience expects, and important text features to include (e.g., language choices, sentence structure, headers, diagrams, other visuals). When students select a community audience that includes speakers of their home language, encourage students to write in their home language.

When students study models of writing in different disciplines, they gain insight into varied rhetorical strategies, narrative techniques and linguistic conventions. Selecting a variety of model texts to illuminate the genres and unique approaches of discipline- and career-specific texts students will write is key. Analyzing these texts is particularly helpful for both multilingual learners and students experiencing disability as they learn to identify key features, structures and language used. For greatest impact, have students use the analysis to create a template for their own writing.[142]

In successful classrooms with multilingual learners, educators also use texts about the same topic in students' home languages. Students analyze these texts for writing style, comparing the direct style often found in Western texts with the more indirect styles common in some other cultures. For example, while Western writing typically prioritizes clarity and directness, some cultures value subtlety and implicit communication.[143]

Students who are familiar with indirect styles gain a deeper understanding of the nuances in writing. This analysis enriches students' appreciation of different cultural perspectives and equips them with a broader range of stylistic tools for conveying information in their own writing. By exploring these stylistic differences, both educators and students can develop a more comprehensive understanding of the multiple ways information can be effectively communicated.

GUIDANCE FOR PRACTICE

Considerations for Selecting and Using Model Texts

Select texts that illuminate typical text structures, organization, purposes and audiences for the discipline studied and that connect to real-world professional contexts, so that students can emulate these structures in their own writing.

- Ensure that exemplar texts represent students' identities and lived experiences. To do this:
  - Look for authors who authentically represent the experiences and identities of students and, as relevant, of the people included in the text—to ensure accurate and respectful portrayal of experiences.
  - Work with students, parents and local professionals to identify texts that resonate with their cultural and professional experiences, such as profiles of local entrepreneurs or case studies about issues affecting their community.
  - Select materials that reflect diverse career paths and contributions, highlighting professionals from varied cultural and linguistic backgrounds to show students that individuals like them are making meaningful impacts in various fields.
  - Select texts that offer depth and complexity in their exploration of issues and topics that engage students with challenging ideas and perspectives and expand their understanding of the world.
  - Choose texts that engage students with real-world issues, like sustainability initiatives or innovative technologies, to inspire connections between literacy and future career goals.

To build adolescents' understanding about the rhetorical choices authors make, invite students to compare, contrast and analyze two texts on the same topic, preferably by the same author.[144] Consider including a text that has multimodal elements, such as a video, an infographic or hyperlinks to other sources. Students can then emulate the techniques these authors use in their own writing. (See Guidance for Practice: Same Writer, Different Choices for an activity that leads students through comparing and contrasting two texts by the same author.)

GUIDANCE FOR PRACTICE

Same Writer, Different Choices

Directions to Students: Compare and contrast two different texts by the same writer. What do you notice? Start by recording your observations in a Venn diagram. Then answer the questions that follow in your notes. Consider the writer's word choices, sentence structure, tone and use of genre conventions in each text.

1. What do you notice about the choices this writer has made in each text? What are the similarities? What are the differences?
2. Why do you think the writer has made these choices?
3. What do these choices tell you about the writer's audiences and purposes?
4. What do they tell you about the genres the writer is writing in?
5. When have you had to change how you write to meet the needs of different situations?

Reproduced with permission from Jennifer Fletcher, *Writing Rhetorically*

To build students' motivation for rhetorical analysis, effective classrooms engage them in connecting this analysis with possible future careers. (See Guidance for Practice: Infuse Career-Connected Practices When Using Model Texts for strategies to help students connect text analysis and career practices.)

GUIDANCE FOR PRACTICE

Infuse Career-Connected Practices When Using Model Texts

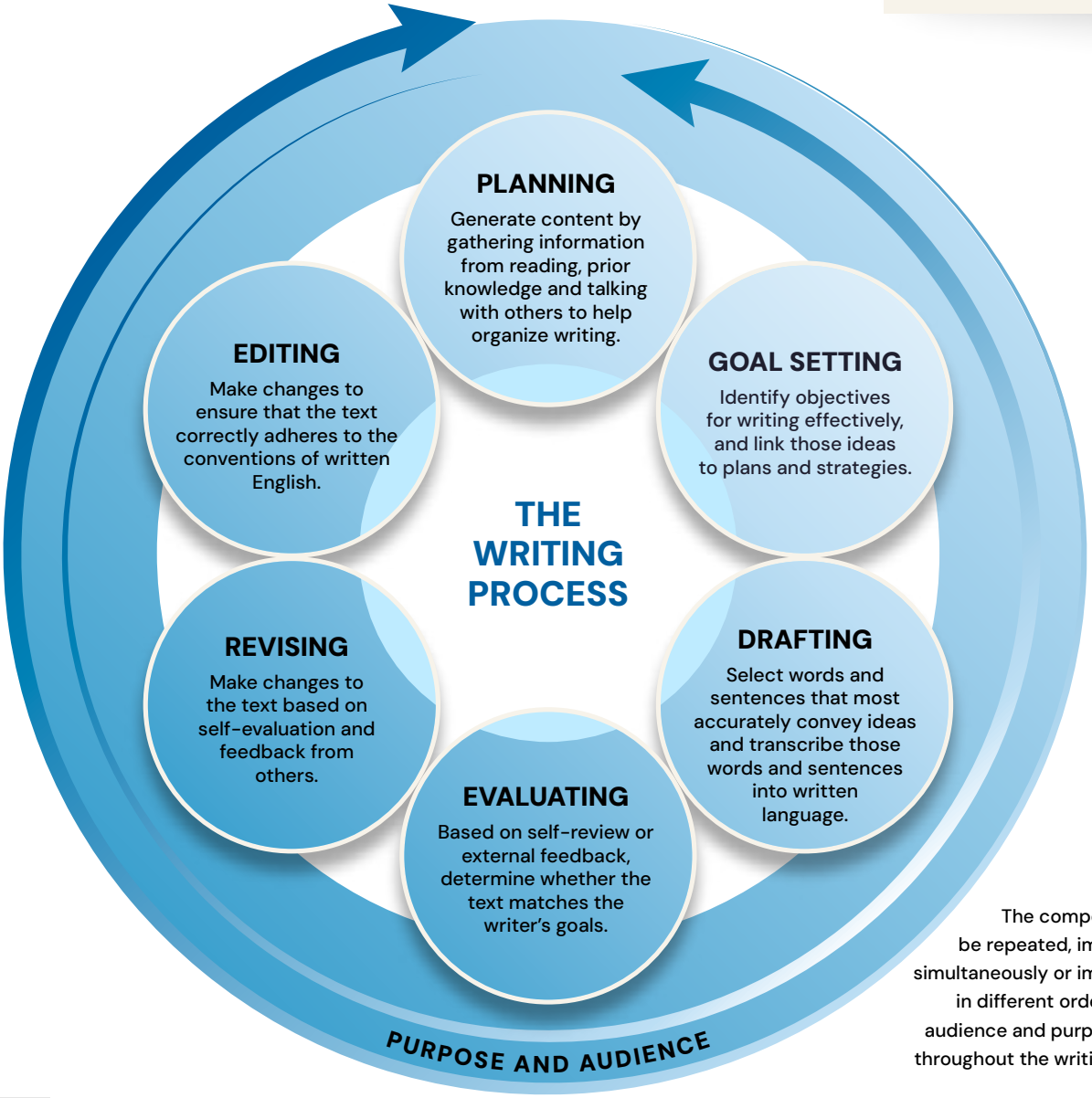
- **Analyze text features linked to careers:** Help students identify and discuss the purpose, audience and structure of texts within career contexts (e.g., the persuasive elements of an advertisement or the clarity of instructions in a technical manual).
- **Engage in role-specific writing tasks:** Encourage students to create their own texts modeled after the exemplars, such as writing a scientific abstract, drafting a historical narrative for a museum exhibit or developing a project proposal for a community initiative.
- **Connect texts to interdisciplinary applications:** Show how skills from one discipline can apply to multiple careers, like how storytelling in language arts is crucial for advertising or how precision in math is key for architecture.
- **Highlight transferable literacy skills:** Use the texts to demonstrate how clear communication, logical organization and audience awareness are valuable across professions.

Explicit Teaching of Writing Strategies

Educators explicitly build students' understanding that all writers use a process. Its components are planning, goal setting, drafting, evaluating, revising and editing (see Figure 3 for an overview of the components of the writing process). These components can be repeated, implemented at the same time or in a different order, or even ignored.[146]

> "To promote the critical selection of strategies, instead of the rote use of strategies, identify opportunities for students to use writing strategies in new ways and in different contexts."
>
> – Graham and colleagues[145]

Figure 3. Components of the Writing Process



The components may be repeated, implemented simultaneously or implemented in different orders, keeping audience and purpose in mind throughout the writing process.

Source: *Teaching Secondary Students to Write Effectively* practice guide[147]

In the context of the writing process, effective classrooms support adolescents' development as writers by explicitly teaching them to use strategies for carrying out each component. **Writing strategies** are structured series of actions that writers undertake to achieve their goals—coupled with regular opportunities to practice writing. Explicit instruction in writing strategies significantly improves students' performance on writing measures.[148] Moreover, students who are not yet writing at grade level especially benefit from explicit teaching of strategies.[149]

Writing strategies are structured series of actions (mental, physical or both) that writers undertake to achieve their goals. Writing strategies can be used to plan and set goals, draft, evaluate, revise and edit.

Explicit instruction in writing, as in reading, includes three steps:

1. Students observe educators' thinking and actions.
2. Students practice the strategies used.
3. Students evaluate the use of strategies and reflect on the quality of their own writing.

As with teaching reading strategies, sharing why, how and what to do helps students internalize writing strategies.[150, 151] (See Section 4, Explicit Instruction for Teaching Reading Strategies, for additional information.)

Explicit instruction helps students develop agency and confidence as they increasingly understand the purpose of writing strategies (see Guidance for Practice: Writing Practices That Build Agency). Explicit instruction also teaches students how to select appropriate strategies as they compose both print and multimodal texts (see Guidance for Practice: Sample Questions to Guide Strategy Selection).[152]

GUIDANCE FOR PRACTICE

Writing Practices That Build Agency

Several practices help students internalize strategies, use them flexibly and effectively manage their writing assignments. These include:

- **Emphasizing goal setting:** To help students use strategies flexibly, effective classrooms emphasize goal setting and encourage students to reflect on how differing strategies helped their writing.[153] Goal setting can occur during any component of the writing process. Teaching goal setting and other procedures for self-regulation during writing is especially supportive for students experiencing disabilities.[154] Goals can focus on the writing product, the writing process or strategy use.
  - Product goals include adding evidence to support a particular point or on using more precise language to describe the results of an experiment.
  - Process goals include asking a peer to read writing and give specific feedback and using spell-check before finalizing the writing.
  - Strategy-use goals include automatically using revision strategies and providing specific feedback to peers.
- **Breaking assignments into manageable steps:** Using the writing process to break down writing assignments into manageable steps is especially helpful for multilingual learners.[155] As part of the process, provide appropriate scaffolds, such as exemplars, graphic organizers, sentence starters and word banks. Such supports can help multilingual learners organize their ideas and use academic language more effectively.
- **Focusing on particular components of the writing process:** Teaching the writing process can be time intensive. Students do not need to use a full process for every writing task; effective teaching includes choosing which components to focus on. For example:
  - In history, when asking students to respond to document-based questions, emphasize planning, drafting and peer evaluation to build adolescents' comfort with making arguments using historical sources. During a grading period, encourage students to choose the document-based question most interesting to them and transform it into a public-facing essay. For the essay, add in goal setting, revision and editing.

Sample Questions to Guide Strategy Selection[156]

Teach students to ask and answer these questions:

- What goals do I need to set and accomplish to write for this audience or purpose?
- What writing strategies do I know work well when writing for this audience or purpose?
- What do I know about this assignment that would help inform my strategy selection?
- When do I use this strategy? When I am planning? Drafting? Revising?

FEATURED RESOURCE

Teaching Secondary Students to Write Effectively

Recommendation 1 of the What Works Clearinghouse Practice Guide: *Teaching Secondary Students to Write Effectively* focuses on explicitly teaching writing strategies, including multiple practical examples related to each component of the writing process. The recommendation and steps for implementing it follow.

Recommendation 1: **Explicitly teach appropriate writing strategies using a Model-Practice-Reflect instructional cycle.**

- **Recommendation 1a: Explicitly teach appropriate writing strategies.**
  - Explicitly teach strategies for planning and goal setting, drafting, evaluating, revising and editing.
  - Instruct students on how to choose and apply strategies appropriate for the audience and purpose.
- **Recommendation 1b: Use a Model-Practice-Reflect instructional cycle to teach writing strategies.**
  - Model strategies for students.
  - Provide students with opportunities to apply and practice strategies.
  - Engage students in evaluating and reflecting upon their own and peers' writing and use of modeled strategies.

The following subsections detail strategies for teaching the components that happen early versus later in the writing process.

Teaching How to Plan and Draft

These components typically happen early in the composing process. Effective strategies for teaching them start with thinking about audience and purpose.

The most impactful planning processes engage students in discipline- or career-specific activities such as conducting experiments, solving complex math problems, conducting financial analysis, collecting health data, engaging in close reading and analysis of literary texts, or comparing and contrasting historical sources with different perspectives. Effective classrooms then support planning for writing by providing tools that help students consider the purpose and audience, determine what information to include, and organize that information in discipline-specific ways.

As students begin to draft, it is important to teach writing strategies that focus on creation of the overall text—for example, planning organization and logic or use of evidence—as well as word- and sentence-level skills. Students experiencing disabilities especially benefit from clear modeling and from practicing writing strategies that focus on word choice and sentences with simple to complex levels of text.

Focusing on one type of drafting strategy at a time (for example, organization, logic, use of evidence, or word and sentence skills) is the best approach for multilingual learners who are classified as English learners. Then educators can go back and focus on other areas of drafting. Educators will want to consider students' English language proficiency as they plan for this.

GUIDANCE FOR PRACTICE

Strategies for Sentence Construction

- **Modeling:** Educators demonstrate the construction of sentences by thinking aloud as they write.
- **Sentence starters:** Educators offer different types of sentence starters to support the different types of sentences students might write (e.g., claim, evidence, reasoning).
- **Sentence combining:** Educators provide students with multiple simple sentences and invite them to combine the simple sentences to create more complex sentences. This helps students understand sentence structure and variety.

Teaching How to Evaluate, Revise and Edit

These components typically occur in later phases of the writing process. Teach students to evaluate their own writing and that of their peers to foster a deeper understanding of their strengths and areas for improvement. Self-evaluation leads to more effective use of writing strategies and better writing quality as students revise and edit their writing.[157] Similarly, reviewing a peer's writing helps strengthen the reviewer's writing.[158] (See Guidance for Practice: Supporting Students in Evaluating and Revising Writing for examples of evaluation and revision strategies.)

> "As writers and teachers of writing, we are met with the challenge to locate experiences within our writing instruction that compel our students to make meaning of their worlds."
>
> – Johnson[159]

To ensure that the formative feedback process is asset-based and culturally responsive,[160] effective classrooms engage in meaningful dialogue between educators and students about their writing and about their preferences for receiving feedback. (See Guidance for Practice: The Importance of Feedback Preference for educator and peer feedback strategies.) Meaningful dialogue conveys high expectations and connects adolescents' out-of-school identities with their school-based identities to cultivate their genius and offer a space for healing.[161] All discussions—with the educator and among students—emphasize appreciative feedback as well as ways to make writing even stronger.

For multilingual learners, offering constructive feedback that addresses both the content of students' writing and the linguistic forms they use is key to growth. For greatest student impact, focus on the overall meaning of the writing, rather than trying to correct every error.

GUIDANCE FOR PRACTICE

Supporting Students in Evaluating and Revising Writing

To support students in evaluating and revising writing:

- **Rubrics and checklists:** Engage them in using rubrics or checklists[162] related to the assignment or genre. Create or revise rubrics and checklists to ensure that they are asset-based by using language that shows what is present (not just what is missing) in the writing. Consider descriptive categories that showcase different types of successful writing and are not scale-based. Spend whole- and small-group time reading and discussing the rubric or checklist together, underlining what differentiates the categories.
- **Exemplar papers:** Engage students in discussing exemplar papers that reflect both emergent and fully developed examples of key text features addressed in the rubric or checklists. Model for students how to distinguish between differing levels of development for one or more key text features. When modeling, use language to emphasize what is present in the writing. Encourage students to work in pairs to consider another key feature and discuss which of the papers is more developed and why.[163, 164]
- **Peer review:** Have students work in pairs to review each other's writing using the assessment tool and exemplar papers. Encourage them to discuss what is present in the writing and what could be even better. After the pair discussion, have students set goals for revising or editing their papers and then provide time for them to make their planned revisions and edits. Educators may want to repeat this process, focusing first on revising and then on editing.

The Importance of Feedback Preference

To support productive educator and peer feedback:

- Use a student interest survey to ask about students' feedback preferences.
- Create opportunities for students to revise and edit their writing.
- Offer credit when students revise and resubmit work to meet expectations.
- When reiterating high expectations for students and their work, incorporate words of encouragement.

It is key for students to understand they will choose strategies based on the component of the writing process, the discipline or career pathway, and the genre of writing.[165] Table 6 offers sample evidence-based strategies for each component of the writing process. (The "print strategies" column is reproduced and adapted from information in *Teaching Secondary Students to Write Effectively.*)[166]

Table 6. Evidence-Based Strategies for Each Component of the Writing Process

WRITING PROCESS COMPONENT	PRINT STRATEGIES[167]	DIGITAL STRATEGIES
Planning	A Venn diagram can help students to write a compare/contrast text. Each circle can represent a different topic, character or position. The parts of the diagram that overlap can represent the similarities. The unique parts that do not overlap can represent their differences.	Invite students to create a concept map infographic that allows them to tailor the shapes and lines according to their thinking and relationships between ideas.
Goal setting	Offer students a list of individualized writing goals and have them select one or more goals to focus on while writing. For a persuasive essay, for example, one student's goal may be to write an essay that addresses objections that their audience might express about their viewpoint.	Invite students to write goals for their writing progress as well as goals for their digital collaboration with peers. Encourage peers to discuss whether and how they achieved their collaboration goals.
Drafting	Teach students to examine one or more examples of model texts or models for carrying out writing processes and attempting to emulate these models when writing.[168]	Offer students opportunities to examine one or more examples of multimodal texts (e.g., texts that include both text and elements such as images, video or audio). Have students emulate these models when carrying out writing processes.
Evaluating	Teach students to use a color-coding strategy to evaluate their writing. Different colored fonts or highlighting can be used to identify different writing elements (e.g., claim, evidence, commentary). Teach students to notice where and how much of each color they incorporate in their text to guide their revisions.	Offer peer-review opportunities where reviewers use review mode or digital comments and writers then choose to accept the feedback or disregard it, based on their purpose for writing.

WRITING PROCESS COMPONENT	PRINT STRATEGIES[167]	DIGITAL STRATEGIES
Revising	Teach students to use the **STAR** strategy while revising their texts. • ***Substitute*** overused words with precise words, weak verbs with strong verbs, weak adjectives with strong adjectives and common nouns with proper nouns. • ***Take out*** unnecessary repetitions, irrelevant information or information that belongs elsewhere. • ***Add*** details, descriptions, new information, figurative language, clarification of meaning or expanded ideas. • ***Rearrange*** information for a more logical flow.	Offer students opportunities to make macro-level changes to the content and organization of their digital texts. Teach students to use keyboard shortcuts to easily move text within a document.
Editing	Teach students to use the **COPS** strategy to support students' editing of their texts. • Have I ***capitalized*** the first word of sentences and proper names? • How is the ***overall*** appearance? • Have I put in commas and end ***punctuation?*** • Have I ***spelled*** all words correctly?[169]	Remind students to use the grammar and spell-check features in their digital writing spaces. Ensure that students reread their writing for accuracy and clarity.

GUIDANCE FOR PRACTICE

Practices That Build Agency

- **Student interests:** Ask students about their genuine interests, including things that they are deeply passionate or concerned about. In science, students may express interest in climate change. In CTE, students may signal their interest in careers that rely on scientific understandings (development of software, medical field, agriculture). Encourage students to write about connections between these interests and topics that are key to understanding the central focus of the course.

- **Topics that matter:** To engage and inspire students, identify topics that matter to them and that are key to understanding the discipline. In social science, invite a local government official or a community elder to talk about important challenges and opportunities in the community. Have students deconstruct the speech to identify whether and how it was engaging and how the speech differed from typical academic writing. After this, have students work in pairs to select a community issue that they are interested in learning more about. Have students conduct research and prepare testimony to present to a local governing body or write a letter to the editor of a local news outlet about the issue. Encourage the students to use the speech as a model for their own testimony or letter.

Use of Talk and Collaboration

Integrating opportunities for conversation, or oracy, throughout the writing process supports adolescents in developing their writing. Accomplished writers see writing as communication among individuals and within groups.[170] Recognizing the inherently social nature of writing, accomplished writers collaborate with others to seek a range of feedback and engage in synchronous writing collaboration.[171]

For classroom conversation to be supportive of writing, educators first need to establish and maintain a sense of belonging. When students feel a sense of belonging, the classroom becomes a place where students share ideas and sustain their engagement in writing.[172]

Once a supportive environment is in place, key dimensions of using talk to support writing development include:

- Developing structured opportunities for discussion that lead to writing.
- Providing students with carefully designed questions and structured opportunities to discuss meaningful problems and questions supports students as they plan and draft their writing.[173, 174, 175]
- Engaging in rich discussion can also lead to peer collaboration and educator-guided joint construction of text.[176] (See Guidance for Practice: Using Talk and Collaboration to Support Writing for additional detail.)

Discussion and collaborative writing foster a deeper understanding and integration of different perspectives. They offer multilingual learners the opportunity to discuss content, share ideas and receive feedback in a lower-stress environment. Group writing tasks can also facilitate language practice and development as students negotiate meaning and clarify understanding among peers.

Collaboratively developing writing also supports students experiencing disabilities, especially when there is also explicit strategy instruction. Emphasizing oracy in the writing process not only strengthens adolescents' communication skills but also builds their confidence and competence as writers.

GUIDANCE FOR PRACTICE

Using Talk and Collaboration to Support Writing

Effectively using talk and collaboration to help students involves:

- **Establishing belonging and safety:** To create a sense of belonging for all students, especially for those experiencing disabilities, create routines and habits around writing that help students predict what will happen in the space. (See Section 2 for additional guidance.) Also, use conversation protocols to support student talk.
- **Developing structured opportunities for discussion connected to writing:** Many of these conversations will focus on text, so use the approaches for facilitating text-based discussion as a support for writing (see Section 4).[177, 178] To support students in using what they learn from peers, educators encourage students to write down ideas that they hear during the discussion and synthesize big ideas that emerge.
- **Providing scenarios that integrate text, talk and writing:** One effective approach is to develop complex scenarios about a compelling problem for students to discuss and identify texts and data for students to draw from. For example, have students examine the contemporary question of providing reparations. Students could iteratively read and discuss primary sources related to specific historical cases, consider the decision to provide reparations to Japanese Americans incarcerated during World War II using primary sources, and use literature to explore the question of whether people have an obligation to others.[179, 180]
- **Creating opportunities to collaboratively develop writing:** Building on discussions, ask students to collaborate with a peer to develop their writing. When writing together, students exchange and co-develop ideas, integrate their perspectives and gather their ideas. Effectively teaching and supporting collaborative writing involves having students work together to:
  - Organize thoughts, clarify concepts and refine arguments.
  - Discuss, debate and rehearse ideas orally.
  - Develop a more nuanced understanding of their audience and purpose.
  - Decide how to use language in a deliberate and impactful way.
  - Evaluate, revise and edit their writing.

Use of Digital Tools

In our increasingly digital world, the definition of writing is constantly shifting to encompass multiple modes of composition, including visual and audio dimensions and the use of digital tools such as generative AI to support the writing process. The ability to access and effectively use these digital tools is critical for applying literacy skills in real-world and career contexts. Whether used for drafting professional documents, creating multimedia

presentations or other writing purposes, digital tools enhance communication and enable students to meet the evolving demands of the workplace.

Incorporating these modes and tools into writing instruction taps adolescents' strengths, interests and experiences—and supports them in navigating literacy landscapes in and out of school.

For multilingual learners, multimodal resources such as online writing tools, speech-to-text, videos and interactive activities help support the writing process. Resources such as spell-check, grammar tips and genre-specific templates provide additional scaffolds.[181]

Similarly, for students experiencing disabilities, digital tools remove process roadblocks by allowing students to increase font size, use the cut/paste function to help revise writing, or obtain quick suggestions for spelling, grammar and clarity. Perhaps more important than removing process roadblocks, digital writing tools have been shown to improve students' performance on writing measures.[182]

Utilizing and becoming proficient in digital tools equips students with essential workplace skills, as many professions require expertise in software for word processing, data visualization, collaboration and communication. It is crucial to emphasize both the mechanics of using these tools and also their role in fostering critical thinking, creativity and adaptability—skills that are invaluable in both academic and professional settings.

As digital tools, especially generative AI, rapidly evolve, it is essential to prepare students to critically evaluate and ethically use these technologies, ensuring they can leverage them effectively to enhance their literacy skills and professional readiness.

Support Multimodal Composition

Engaging students in composing multimodal texts, such as infographics, 3D models or videos, involves using the writing process to develop both text and design elements. Educators can creatively blend traditional and **multimodal writing** to support both the writing process and the development of final products. For example, educators can encourage students to create projects that combine multiple forms of literacy, such as podcasts that include music, interviews and narrative storytelling.

> **Multimodal writing** can be loosely defined as the activity and process of creating content that integrates multiple modes and resources, including linguistic, audio, visual, spatial and symbolic systems that are used for meaning-making.

Developing multimodal compositions involves the same processes as creating traditional texts. For example, when considering purpose, audience and message, educators can use social media simulations in the classroom to discuss how language and literacy are used online, including the impact of hashtags and memes.

GUIDANCE FOR PRACTICE

Using Digital Tools to Support the Writing Process

- **Infographics:** To support planning and drafting, replace traditional graphic organizers with infographics. Students select structural design features (e.g., columns, pathways), visuals (e.g., graphics, images) and linguistic elements (e.g., words, phrases, sentences) to organize and share their initial thinking. Educators and students review the infographic together, focusing on feedback about content and organization. Then have students begin composing traditional text.[183] To connect to career, have students consider how to, for example, develop infographics to share results from scientific studies.

- **Digital stories:** Use digital storytelling as a procedural support for drafting and revision.[184] Have students create a video between drafts of traditional text.[185] Ask students to write a research synthesis on a high-interest topic. Next, students create a digital story using visuals and audio to present the same content. After engaging in collaborative critique with peers, students revise their research writing, using the feedback they received. To connect to career, have students consider, for example, how digital storytelling is used in marketing campaigns and develop a digital story to market a product they created.

Using Digital Tools, Including Generative AI, to Support Writing Instruction

Note: Digital tools, especially generative AI, are rapidly evolving. This framework (written in 2024) primarily reflects literacy practices as they would occur regardless of whether technology was present. Beyond the content in this section, educators can find additional information about generative AI in ODE's Generative Artificial Intelligence in K-12 Classrooms guidance.

It is crucial for educators to understand that adolescents are increasingly becoming active users of generative AI, both within and outside the school environment.[186] In educational settings, students use AI-powered tools for writing, generating creative content and supporting problem-solving. Beyond school, adolescents are exploring AI-driven platforms for generating art, music and even storytelling. Adolescents are consumers but also contributors to the development of AI-generated content, shaping the evolving landscape of digital creativity.

GUIDANCE FOR PRACTICE

Composing Digital Texts Across the Disciplines

- **Science:** Share experimental results about science content and context from students' lived experience. Have students complete an experiment, then present their findings in ways that are engaging and accessible to a nonscientific audience. This allows students to explore the intersection of science communication, digital literacy and creative expression while enhancing their ability to convey complex ideas through simple, effective visual designs.
- **History:** Create digital timelines related to a significant historical event from their culture for the purpose of informing their classmates. Encourage students to create digital timelines or interactive maps that document significant historical events or social movements to foster a deeper understanding of historical contexts. To emphasize the importance of media literacy in interpreting and presenting historical data, encourage students to use various multimedia elements, such as archival footage, interviews, photographs or narration.
- **Language arts:** Discuss social media impact. Hold regular discussions on the impact of digital media on communication and literacy, analyzing the role of various digital platforms in shaping public discourse. Such discussions could lead to drafting of blogs, vlogs or opinion editorials.
- **Math:** Develop math educational videos. Challenge students to produce educational videos or podcasts that tackle mathematical problems, concepts or puzzles. Students then explain math topics in their own words, possibly incorporating animations or digital illustrations to visualize abstract concepts. This allows students to develop digital communication skills while reinforcing mathematical understanding.
- **CTE:** Show students that engineers rely on digital drafting tools and have them use these tools as they develop projects.

  Invite a marketing professional to show students how they use multimedia platforms to design campaigns. Then have the class work collaboratively to use multimedia platforms to design a campaign.

  During practicums, ask students to observe healthcare professionals utilize digital documentation systems for patient care. Use anonymized data to have students develop a plan for patient care.

Adolescents' use of these tools outside of school may lead some students to question whether they need to learn to write because they perceive that writing can be more easily accomplished by developing a good prompt. Thus, preparing students for the changing writing landscape while also focusing on developing writing proficiency becomes a primary educational design consideration. It includes the flexible use of different tools and requires schoolwide planning and coordination.[187]

To support students in navigating this complex and rapidly evolving landscape, educators can engage them in conversations about ethical, health and equity considerations related to AI use. For example, the class can analyze

texts generated using generative AI to identify ways that bias shows up in the writing. Such analyses can help students hone their critical thinking and awareness of bias when using these tools. CTE educators, in particular, are well positioned to prepare students for a future where AI skills are essential and guide them toward responsible use of these technologies.[188]

Carefully developed generative AI prompts and thoughtful classroom activities may support students throughout the writing process. Students can use generative AI, coupled with peer discussion, to brainstorm multiple ideas before drafting. Additionally, this tool can be used to better understand the likely background knowledge, identity and values of the intended audience.

When integrating the use of generative AI during the writing process, educators may wish to teach students to pause and ask themselves important questions regarding the output[189] (see Guidance for Practice: Metacognitive Prompts for Writers Using Generative AI). These metacognitive pauses are similar to the ones that writers use when they are monitoring their writing progress and when they are making decisions about what writing feedback to integrate into their writing.[190] When students are taught to critically assess the feedback they receive, whether offered by a writing partner, an educator or a generative AI tool, they are empowered to take ownership of their writing. This agency is critical for writing identity development and can help address students' questions about whether learning to write is worthwhile.[191]

Generative AI can make the challenging task of teaching and assessing academic integrity even more challenging. Teaching students methods for citing their use of generative AI tools in their writing is essential, whether writing takes place inside a technology-enhanced classroom or is completed outside the classroom.[192] Proactively teaching students to cite generative AI use, just as they must cite material from external sources, supports a learning environment that acknowledges and adheres to common academic integrity policies.

GUIDANCE FOR PRACTICE

Metacognitive Prompts for Writers Using Generative AI

Writers might ask themselves the following metacognitive questions when using generative AI tools while writing:[193]

- Does the feedback address my specific writing goals or objectives?
- Are there any suggestions I disagree with, and why?
- Is this feedback respectful to my language(s) and dialect(s)?
- Is the feedback sensitive to the cultural or social context in which I am writing?

Currently, leading scholars and writing educators see that generative AI and other digital tools can play a role in supporting students in evaluating, revising and editing their writing.[194] Some evidence suggests that generative AI offers holistic writing scores that are comparable to those given by educators.[195] Because generative AI produces scores and offers formative feedback quickly, it can help students revise their writing.[196] Students can also use generative AI for just-in-time feedback on micro-level writing skills like spelling, grammar and vocabulary use. Educators can teach students strategies for using generative AI effectively, including for critically evaluating the writing feedback they receive based on their purposes for writing. (See Guidance for Practice: Using Digital Tools to Evaluate Writing for more information about strategies to use with digital tools.)

GUIDANCE FOR PRACTICE

Using Digital Tools to Evaluate Writing

TOOL	STRATEGY
Peer-review platforms	Online platforms designed for peer review allow students to share their writing with peers and provide feedback in a structured manner using a comments feature. For greatest impact, give students sentence starters to offer feedback on aspects of the text for which the writer requests it.
Generative AI tools	Using district-approved tools, work with students to engineer prompts tailored to the type of feedback students want to receive. Effectively using this feedback involves educators and students collaboratively evaluating the feedback for its helpfulness, based on the student's writing purposes.
Advanced writing assistants	Advanced writing assistants help students evaluate their near-final drafts for spelling, grammar, vocabulary and tone. Effective use of these tools involves teachers supporting students to set goals for editing based on the results.

KEY TAKEAWAYS

- **Provide opportunities to consider the purpose and audience for writing.** In all disciplines and career pathways, analyzing model texts builds students' awareness and understanding of purpose and audience, as well as offering models of writing that students can emulate. The ability to adapt writing for different purposes and audiences is an especially valuable career skill.
- **Explicitly teach students to use writing strategies flexibly.** Using a Model-Practice-Reflect instructional cycle helps students internalize specific strategies for carrying out components of the writing process in a flexible way. Teaching strategies is important for both traditional print text and multimodal compositions.
- **Engage students in talk and collaboration as they draft and revise writing.** Carefully planned and facilitated whole- and small-group discussion helps students in developing their thinking and their writing. In addition, discussions focusing on revision can help students improve their writing.
- **Teach students to use digital tools, including AI, to support writing.** Digital tools are constantly evolving, and many students use these tools outside school. Teaching students to use, critically evaluate and explicitly acknowledge their use of these tools can support them in developing writing.
- **Scaffold support for multilingual learners.** Effective writing instruction for multilingual learners recognizes and leverages their linguistic diversity by providing scaffolds, such as exemplar texts, graphic organizers and sentence frames, which bridge their current abilities with the academic demands of multiple disciplines.
- **Explicit teaching of writing strategies supports students experiencing disabilities.** Self-Regulated Strategy Development is a six-step process for teaching self-regulation skills, which is effective for all learners and is especially helpful for teaching writing strategies to students experiencing disabilities. Focusing explicitly on word, sentence and text features is particularly important.

LEARN MORE

Teaching Secondary Students to Write Effectively

This practice guide provides educators with specific, evidence-based recommendations that address the challenges of teaching students in grades 6–12 to write effectively.

Read Write Think

This site provides sets of lesson plans, teaching materials and professional learning resources on topics frequently taught in classrooms.

National Council of Teachers of English

This site offers the position statement *Professional Knowledge for the Teaching of Writing,* which identifies implications of teaching writing.

Think SRSD

This organization provides free resources for teaching an evidence-based, six-phase process for supporting students' writing development.

Artificial Intelligence and the Future of Teaching and Learning

This report guides educators in understanding what emerging technologies can do to advance educational goals—while evaluating and limiting key risks.

Oregon Department of Education, Generative Artificial Intelligence (AI) in K-12 Classrooms

This document defines AI and provides guidance on the use of AI in K-12 classrooms.

6

Disciplinary Literacy in

Language Arts

In today's interconnected society, literacy and communication are foundational. Language arts education provides students with the tools to analyze, create and communicate complex ideas. These skills not only foster academic and career achievement, self-expression and critical thinking but also enable students to become informed and articulate contributors to our democracy.

Given our rapidly evolving digital age, language arts education includes new literacies, ensuring that students are proficient in analyzing and producing texts across a range of traditional and contemporary mediums.

For a full set of literacy resources, consider earlier sections of the framework:

- Section 1 offers framing about the why and how of disciplinary literacy, as well as additional examples of disciplinary literacy in language arts.
- Section 2 provides concrete suggestions for developing a sense of belonging and engagement.
- Section 3 provides general guidance for supporting multilingual learners and students experiencing disability.
- Sections 4 and 5 provide detailed ideas relevant across disciplines for supporting students' reading and writing development.

Literacy in Language Arts

Language arts classrooms focus on developing a suite of skill sets vital for students' academic, personal and career growth. These four broad skill sets are as follows:

- Critical reading and textual analysis empower students to delve beneath the surface of texts to unearth deeper meanings. This skill set involves parsing through language, structure and literary devices to interpret an author's intent, identify themes and evaluate the effectiveness of various texts.
- Creative and analytical writing skills enable students to express themselves with originality and precision. Students learn to craft narratives that captivate, argue points with influence while refuting counterclaims and critically analyze texts. Whether composing poetry, research papers or argumentative essays, students gain the ability to communicate complex ideas and emotions.
- Oral communication and listening skills enable students to articulate their ideas clearly and to understand and evaluate the spoken word. Through discussions, presentations and debates, students develop the ability to speak with confidence and to listen actively.
- Viewing and visual literacy skills allow students to interpret images, films and other visual media. Students learn to analyze visual texts with the same critical eye as written texts, considering elements such as composition, color and symbolism. By understanding visual rhetoric and its persuasive power, students become discerning consumers and producers of visual content, ready to navigate a media-saturated landscape.

SELECT LIST OF LANGUAGE ARTS CAREER PATHWAYS

- Publishing.
- Journalism.
- Communications and marketing, including social media.
- Creative writing.
- Scholarship and teaching.
- Law.

The skills and habits of mind fostered in language arts support the deep disciplinary work of literary critics and authors as well as the work of many professionals. All four skill sets are central to the career pathways that emphasize communication, awareness of audience and creativity. Highlighting the ways in which critical reading, clear communication, logical organization and audience awareness are transferable to many workplaces serves to increase students' interest and motivation in language arts. (See Section 5, Opportunities to Consider the Purposes and Audiences for Writing.)

GUIDANCE FOR PRACTICE

Connecting Language Arts Disciplinary Literacy Skills to Careers

To support students in seeing the relevance of language arts to their futures, effective classrooms connect these skill sets to career opportunities through a variety of activities. These include:

- Inviting professionals in journalism, publishing, marketing or legal professions to share how they use critical reading, persuasive writing and creative storytelling for their roles.
- Engaging students in recording audio or video of readings, applying digital media skills, and considering the needs and forms for different audiences.
- Inviting students to write journalistic articles, marketing copy or grant proposals.

Language Arts-Specific Disciplinary Literacy Practices

Language arts-specific disciplinary literacy practices focus on:

- Nuanced textual analysis.
- The interpretation of literary and rhetorical devices.
- The ability to construct coherent, textually supported arguments.

Language arts emphasize the processes and conventions of the humanities—how meaning is created, interpreted and communicated within various literary contexts.

Language arts-specific disciplinary literacy enables students to participate actively in the community of readers, writers and critics. It encourages them to enter the conversation as apprentice analysts and creators who can interpret, evaluate and contribute to the rich tapestry of literary works. By being proficient in this form of literacy, students acquire the critical tools to articulate their own analyses and to engage in a broader dialogue about literature and culture.

HABITS OF MIND OF LITERARY CRITICS

- Critical inquiry and analytic thinking.
- Evidence-based interpretations.
- Openness to multiple perspectives.
- Reflective and ethical reasoning.
- Aesthetic appreciation.
- Intellectual curiosity.
- Communicative clarity and persuasiveness.

Learning to read like a literary critic also supports students in discerning the quality and depth of literary content presented across media. Students learn to question the interpretation of literary works in reviews and adaptations, to consider the fidelity of such interpretations to the original texts, and to appreciate the diverse critical perspectives that can inform our understanding of literature and its role in society.

Accessing Complex Texts

The complexity of texts within language arts classrooms reflects the nuanced realms of language, structure and meaning. Students learn to appreciate stylistic choices, gain an understanding of genre-specific text structures, and recognize the thoughtful application of figurative language and symbolism. They learn the intricacies of literary elements, genre-specific conventions and the depth of thematic content in these texts. (See Table 6LA.1 for a list of key features and strategies for teaching them.)

Table 6LA.1. Strategies for Teaching the Features of Language Arts Texts

THE WHAT — Key Features of Language Arts Texts	**THE HOW** — Teaching Strategies
Quantitative Aspects of Text Complexity • Lexical difficulty (e.g., challenging vocabulary). • Sentence length and syntactic complexity. • Text cohesion.	• Provide targeted vocabulary instruction, including the use of context clues and word analysis strategies, such as Latin and Greek roots. • Use a classroom word wall, where students actively add essential words from text and engage in other activities to build word knowledge (for example, finding words with multiple meanings or creating and explaining categories of words).[197] • Teach cohesive devices such as transition words, pronouns and conjunctions.
Literary Elements and Techniques • Character complexity, character development and how characters interact with their environment. • Narrative structure and plot complexity. • Symbolism, metaphor and other figurative language.	• Teach students to use annotation codes for identifying and reflecting on literary devices and character development. • Use mentor texts to show narrative structures and literary techniques. • Provide practice in writing literary analysis essays that focus on the use and effect of literary elements and techniques.
Genre-Based Complexity • Expectations and conventions of fiction require distinct approaches to reading. • Poetry, drama and prose present unique complexities. • Structure and organization, such as nonlinear narratives and unconventional formats.	• Create a genre rotation in the classroom library. • Organize writing workshops where students compose texts in various genres, focusing on the unique conventions and structures of each. • Use comparative analysis exercises to examine how different genres approach similar themes or content.

THE WHAT — Key Features of Language Arts Texts	**THE HOW** — Teaching Strategies
Figurative Language and Nuanced Meaning • Interpreting metaphorical and symbolic language. • Discerning subtext and inferred meanings. • Analyzing irony, satire and paradox. • Deciphering subtle tones and varied points of view.	• Use dramatic readings/performance to help students understand and appreciate the use of irony, satire and paradox in texts. • Lead guided discussions that focus on interpreting subtext and evaluating the impact of figurative language on the reader's experience.
Thematic and Conceptual Density • Multiple and interrelated themes within a text. • Ethical dilemmas and philosophical questions posed in texts. • Universal themes that connect personal experiences with broader human conditions.	• Engage in brainstorming sessions to identify and discuss intertextual themes within a text. • Foster debate and ethical discussions around the philosophical questions and moral dilemmas presented in literature. • Assign reflective writing prompts that encourage students to connect the text's universal themes to their own life experiences.

Reader and task considerations such as background knowledge, motivation and engagement, and the purpose a reader sets for reading also influence text complexity in language arts. Similarly, contextual considerations such as historical and social contexts of texts, authorial intent and philosophical underpinnings, and contemporary relevance contribute to the difficulty of texts.

Reading Like a Literary Critic

Literary critics employ a myriad of reading strategies to deeply engage with and critically analyze literature. In effective classrooms, educators equip students for the sophisticated analysis and enjoyment of literary works by explicitly teaching the why, when and how of literary critics' strategies to students. (See Section 4 and Table 6LA.2 for general reading strategies and Table 6LA.3 for discipline-specific reading strategies.)

Table 6LA.2. General Reading Strategies Used by Literary Critics

GENERAL STRATEGY	**THE WHAT** — What Literary Critics Do
Making predictions and hypotheses	• Before and during reading, literary critics make predictions about the narrative's development and the evolution of thematic elements. • They form initial interpretations based on titles, prefaces or opening chapters and then read to confirm or refine these preliminary insights.

GENERAL STRATEGY	**THE WHAT** — What Literary Critics Do
Visualizing and conceptualizing	◉ When engaging with descriptive passages or intricate narratives, critics often create vivid mental images or conceptual frameworks to better grasp the text's essence. ◉ They imagine settings, characters and events to foster a deeper immersion in the literary world.
Connecting to prior knowledge	◉ Literary critics draw upon a vast reserve of literary history and theory to contextualize new works. ◉ They interlace new insights with established literary frameworks, seeking resonance or divergence from known patterns and themes.

Table 6LA.3. Discipline-Specific Reading Strategies Used by Literary Critics

DISCIPLINE-SPECIFIC STRATEGY	**THE WHAT** — What Literary Critics Do
Questioning the text	◉ Critics approach texts with a discerning eye, posing questions about themes, character motivations and narrative structure. ◉ They seek to unearth the deeper layers of meaning, considering the author's intentions and the text's cultural significance.
Evaluating evidence	◉ A critical examination of textual evidence, such as motifs and dialogue, is a key strategy for literary critics. ◉ They scrutinize the consistency of character development and the effectiveness of literary devices in conveying the work's central message.
Synthesizing information	◉ Literary critics synthesize insights from multiple texts, blending new interpretations with canonical understandings to construct a more comprehensive literary appreciation. ◉ They identify connections between texts, discerning trends, influences and the evolution of literary styles and genres.
Analyzing author's craft and purpose	◉ Literary critics closely examine how an author's choices in diction, syntax, imagery and structure contribute to the overall impact and meaning of a text. ◉ They analyze how these craft elements serve the author's purpose, whether to persuade, inform, entertain or convey complex ideas and emotions.

DISCIPLINE-SPECIFIC STRATEGY	**THE WHAT** — What Literary Critics Do
Exploring multiple interpretations and critical perspectives	◉ Recognizing that texts can yield a variety of interpretations, critics engage with literature through different lenses, such as feminist, Marxist or psychoanalytic criticism. ◉ They encourage the examination of texts from multiple angles, fostering an understanding that literature can be seen through diverse critical perspectives, each offering unique insights.

For greatest impact on students, use explicit teaching processes to engage students in what literary critics do when reading complex texts. In addition, support students' understanding with regular opportunities to annotate, discuss and write about complex literary texts. (See Section 4, Explicit Instruction for Teaching Reading Strategies and Guidance for Practice: Teaching Students to Read Like a Literary Critic.)

GUIDANCE FOR PRACTICE

Teaching Students to Read Like a Literary Critic

- **Talking to the text:** Encourage "talking to the text," a routine where students engage in a dialogue with the text by annotating questions, comments, connections and reflections in the margins, fostering active reading and deeper comprehension.[198] When working with literary texts, encourage students to emulate the reading strategies literary critics use.
- **Teach close reading techniques:** Instruct students in close reading strategies that require them to analyze the text in detail, focusing on word choice, sentence structure, and how these elements contribute to the work's deeper meaning and the author's intent. Use text-dependent questions that require students to respond with evidence from the text and emphasize post-reading activities that require students to engage with the information they learned during their reading.
- **Develop interpretive discussion skills:** Allow students the opportunity to take time to think and write before speaking about reading. Interactive journals and think-pair-share activities are effective approaches that allow for processing time to synthesize reading and then for discussion. Then, facilitate classroom discussions that prompt students to articulate and defend their interpretations, compare differing viewpoints, and explore the text's themes from multiple critical perspectives. (See Section 4, Using Oracy to Provide Opportunities for Extended Discussion.)
- **Cultivate analytical writing abilities:** Support students in developing analytical essays and response papers using the writing process. Encourage students to construct well-founded arguments that address counterarguments about literary elements, such as character development, thematic depth and authorial craft. (See Section 5, Explicit Teaching of Writing Strategies.)

- **Foster engagement with figurative language:** Lead exercises that help students identify, interpret and appreciate the use of symbolism, metaphor and other figurative language, enhancing their ability to uncover nuanced meanings within the text.
- **Encourage examination of narrative structure:** Guide students to investigate the narrative structure and plot devices used in a text, analyzing how these choices affect the story's delivery and influence the reader's understanding. (See Section 4, Guidance for Practice: Teaching Text Structure.)

Writing Like an Author

To write like an author is to dance with words, crafting sentences and phrases that convey not only meaning but also emotion. Writing like an author involves a deep understanding of narrative techniques, a keen sense of language's rhythm and flow, and the courage to share one's inner world. In language arts classrooms, students must be equipped with specific writing approaches that empower them to create and critique. (See Table 6LA.4 for a list of key approaches used by authors.)

By being proficient in authors' approaches, students become adept at translating their thoughts and imaginations into compelling narratives and insightful analyses, akin to the work of accomplished authors. Careful nurturing of writing skills lays the foundation for a future generation of influential writers, critical thinkers and eloquent communicators.

Table 6LA.4. Key Writing Approaches Used by Authors

KEY APPROACH	**THE WHAT** — What Authors Do
Craft a strong thesis or central narrative	Authors often present a clear central argument or narrative thread that will anchor their message, whether it is a critical essay or a creative story. They also imbue their writing with subtext, providing deeper layers of meaning.
Organize ideas	Authors often pre-organize their ideas, using outlines, story maps or graphic organizers to arrange their ideas coherently and ensure a logical progression of thoughts and plot points.
Use rich descriptive language	Authors employ vivid imagery and sensory details with words, bringing scenes and characters to life.
Implement varied sentence structures	Authors often vary their sentence lengths and structures to create rhythm, enhance meaning and maintain reader engagement.

KEY APPROACH	**THE WHAT** — What Authors Do
Incorporate dialogue and character voices	Authors develop dialogue and unique character voices both to propel the narrative and to create complex characters.
Rely on and use literary techniques	Authors use literary techniques such as foreshadowing, flashback and metaphor for added depth.
Create complex characters	Authors craft multidimensional characters with their own motivations, conflicts and growth arcs. Authors rely on authentic dialogue to capture distinct character voices and experiences.
Build suspense and tension	Authors build suspense and tension through pacing, plot development and character dynamics.
Practice the art of revision	Authors revise and edit, often with other authors, to refine and rework their writing.

To teach students to use authors' approaches, effective classrooms emphasize writing for authentic audiences and purposes, explicitly teach both general and discipline-specific writing strategies, and engage in extensive discussion and collaboration. (See Section 5 for detailed recommendations. Selected highlights of teaching practices appear in Guidance for Practice: Teaching Students to Write Like an Author.)

GUIDANCE FOR PRACTICE

Teaching Students to Write Like an Author

- **Showcase model texts:** Share works from accomplished authors that exemplify strong writing techniques, and use these texts as models for students to analyze and learn from.
- **Create a writer's toolbox:** Help students develop a collection of writing resources, such as vocabulary lists, literary devices and sentence structure variations, which they can reference and expand upon throughout the year.
- **Facilitate peer-review sessions:** Organize peer feedback workshops where students can share their writing and constructively critique one another's work, fostering a collaborative learning environment.
- **Use writing conferences to provide individualized feedback:** Meet with students one-on-one to discuss their writing goals, review their work, and offer personalized guidance and feedback.

Communicating Like a Literary Critic

Literary criticism is as much about eloquent expression as it is about insightful analysis. To communicate like a literary critic, students learn to articulate their analyses and judgments in a manner that is both persuasive and accessible to their audience.

Fostering the communication skills of a literary critic means teaching students the art of persuasive argumentation, the structure of critical essays and the conventions of academic discourse. It also involves engaging students in discussions that mirror literary debate, which values active listening, respectful disagreement and the synthesis of diverse viewpoints.

Through carefully structured activities, students can develop the confidence to voice their ideas and the skill to shape those ideas into meaningful critical dialogue. (See Section 4, Using Oracy to Provide Opportunities for Extended Discussion and Table 6LA.5.)

Ultimately, communicating like a literary critic empowers students to contribute to the broader conversation about literature and its place in society. It sharpens their ability to think critically about texts, to question assumptions, and to engage with others in discussions that are both deep and wide-ranging. As students refine their communication skills, they become adept not only at analyzing literature but also at expressing their thoughts in a way that reflects their identity as critics and thinkers.

Table 6LA.5. Classroom Structures for Teaching Students to Communicate Like Literary Critics

THE WHAT — Communicating Like a Literary Critic	**THE HOW** — Examples
Articulate their interpretations, listen actively and engage in civil discourse	Socratic seminar
Articulate constructive criticism and receive feedback	Peer reviews
Communicate critical viewpoints and understand the intersection of literature and history	Debating perspectives on historical fiction
Collaborative communication	Literature circles

LEARN MORE

National Writing Project Website

The National Writing Project offers a wealth of teaching resources designed to enhance writing instruction across all grade levels and disciplines.

ReadWriteThink

Offers free access to lesson plans, interactive tools and professional development resources for reading and language arts instruction.

CommonLit

Offers free access to complex text sets, organized by theme, grade level and literary device.

Project Gutenberg

Offers over 60,000 free eBooks, including many literary classics, which can be a valuable resource for sourcing texts for classroom use.

Poets.org From the Academy of American Poets

Provides a wealth of poetry resources, including poems, poet biographies, essays and tips for teaching poetry.

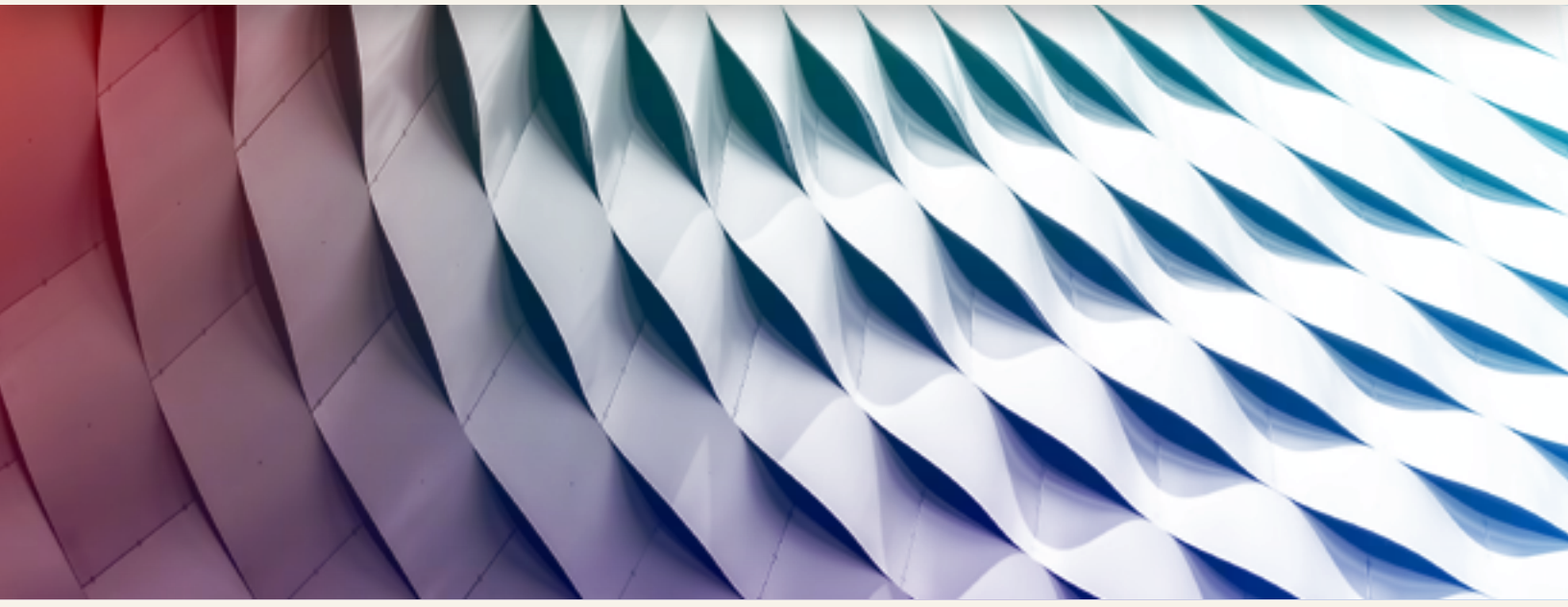
6

Disciplinary Literacy in Math

Mathematics enables individuals to describe the world using numbers and relationships. Math facilitates problem-solving through mathematical modeling that can incorporate both quantitative and qualitative information. The development of mathematical literacy is essential for students to become proficient in numerical analysis, abstract reasoning and logical argumentation. Math-specific disciplinary literacy is especially important in today's data-driven society.

For a full set of literacy resources, consider earlier sections of the framework:

- Section 1 offers framing about the why and how of disciplinary literacy, as well as additional examples of disciplinary literacy in mathematics.
- Section 2 provides concrete suggestions for developing a sense of belonging and engagement.
- Section 3 provides general guidance for supporting multilingual learners and students experiencing disability.
- Sections 4 and 5 provide detailed ideas relevant across disciplines for supporting students' reading and writing development.



Mathematics-Specific Disciplinary Literacy

At its core, disciplinary literacy in math is about the process of fluently translating between written and spoken language and the language of mathematics. Developing these skills opens opportunities for individuals to gain new knowledge through problem-solving and logical reasoning. Disciplinary literacy in math requires deciphering complex symbols and formulas, analyzing patterns and structures, and constructing logical arguments—arguments that are careful, thorough and precise.

HABITS OF MIND OF MATHEMATICIANS

- **Sense making and perseverance:** A desire to understand the meaning of a solution and make sense of multiple problem-solving approaches.
- **Logical reasoning:** Constructing and critiquing viable logical arguments to draw conclusions, solve problems and understand complex relationships.
- **Attention to precision:** A commitment to clear communication with others and to ensuring accuracy within calculations.
- **Mathematical modeling:** The ability to apply mathematics to solve problems arising in everyday life and interpret results in the context of the situation.

Mathematical discourse is characterized by using specialized vocabulary and conveying information through equations, graphs and geometric representations. The language of mathematics allows for the expression of ideas that can be universally understood and rigorously tested within the mathematics community. Literacy practice in mathematics, therefore, is not merely about computation but also includes practice to fluidly combine and switch between the language of math and other languages.

The literacy skills and habits of mind fostered in math underpin multiple professions. Other disciplines draw on them as well, especially science and social sciences like economics and sociology. These fields require the ability to communicate complex concepts through quantitative reports and presentations. To increase the relevance of literacy learning in mathematics, educators can provide information about potential careers and engage students in the authentic literacy practices of these careers.

SELECT LIST OF MATH CAREER PATHWAYS

- Engineering.
- Actuarial science.
- Accounting and finance.
- Data science.
- Computer science.
- Health.
- Scholarship and teaching.

GUIDANCE FOR PRACTICE

Connecting Math Disciplinary Literacy Skills to Careers

To support students in seeing the relevance of math disciplinary literacy to their futures, effective classrooms connect these skill sets to career opportunities through a variety of activities. These include:

- Engaging students in analyzing logical structures and language used in engineering blueprints, financial projections and actuarial analyses.
- Inviting professionals such data analysts, engineers, architects and software developers to describe how they use reading and writing that connect math's symbolic language to other forms of language.
- Inviting students to write texts that emulate authentic structures and purposes in their own writing, preparing them for career-specific communication tasks, including developing technical manuals or financial reports.
- Collaborating with CTE educators to teach oral and written communications approaches that build on mathematics practices—for example, working together on presentations about engineering projects that rely on mathematics-specific language or about health professionals interpreting and communicating test results that rely on mathematical thinking.

Accessing Mathematical Texts

Mathematical texts are materials written by those with a deep understanding of mathematics. Examples of such texts include but are not limited to math textbooks, worksheets, word problems and step-by-step guides. Mathematical texts are different from narrative texts students encounter in other disciplines. Math texts may read as complex and abstract and likely will require students to engage with concepts and procedures that are specific to math.

To aid students in becoming proficient readers of mathematical materials, effective classrooms provide students with targeted strategies that make these texts more approachable and understandable (see Table 6M.1 for a list of key features and teaching strategies). This skill set is essential for academic success and for students' ability to apply mathematical thinking to real-world problems and situations.

Table 6M.1. Strategies for Teaching Key Features of Mathematics Texts

THE WHAT — Key Features of Mathematical Texts and Related Literacy Skills	**THE HOW** — Teaching Strategies for Reading Mathematical Texts
Symbolic language • Mathematics can be thought of as a symbolic language with its own vocabulary, grammar and syntax. • Mathematical texts are generally filled with content-specific symbols, formulas and notations.	• Introduce symbols and their meanings incrementally to build familiarity. • Explain key mathematical terms before diving into the text. • Use visual aids and manipulatives to connect abstract symbols to concrete understanding. • Encourage students to practice translating between symbolic and verbal expressions by using new vocabulary in context or explaining concepts in their own words.
Logical structure • Math texts are structured in ways that require an understanding of math symbols and may require nonlinear reading practices. • Key elements used in logical reasoning include assumptions, quantities and relationships, which need to be identified and understood to effectively translate written information into mathematical expressions and equations.	• Teach students how to identify and follow mathematical arguments from premises to conclusions. • Use flowcharts or concept maps to visualize the structure of mathematical proofs or derivations. • Encourage students to work out logical math reasoning for themselves by utilizing scratch paper to reproduce graphs and equations, using these to work out problems in writing as they read text.
Conceptual density • Every word counts in mathematical texts. Writers of math texts generally aim to eliminate repetitive content. • Texts often build on previous knowledge in a cumulative way.	• Break down complex concepts into smaller, manageable parts. • Provide scaffolding through worked examples and step-by-step problem-solving guides. • Encourage collaborative learning where students can discuss and unpack dense concepts together.
Multiple representations • Mathematical texts often include graphs, pictures, diagrams and symbolic representations that should be integrated with the written text. • Literacy skills include taking time to make sense of this content, which may require a high level of abstract thinking and reasoning.	• Incorporate activities that build spatial reasoning and visualization skills. • Use analogies to relate abstract concepts to familiar experiences. • Promote metacognitive strategies by asking students to explain their reasoning and thought processes.

THE WHAT — Key Features of Mathematical Texts and Related Literacy Skills	**THE HOW** — Teaching Strategies for Reading Mathematical Texts
Precision and accuracy • Words and symbols in mathematical texts have very specific meanings that must be understood accurately and precisely. • Clearly defining key vocabulary terms in the context of mathematics is an important literacy skill for effectively understanding the text and avoiding significant misconceptions and errors.	• Highlight connections between different areas of mathematics and career and community applications. • Encourage students to explore and articulate how new concepts relate to what they have previously learned. • Integrate interdisciplinary connections where mathematics intersects with other disciplines.
Research and evaluation • Understanding of mathematical texts can be enhanced by using multiple reference texts to clarify or better explain a concept. • Literacy skills include research skills to find additional texts or tutorials to explain the same concept. • Literacy skills also include evaluation skills to identify the utility of reference texts or tutorials in helping understand key concepts and problem-solving techniques.	• Provide students with different textbooks or online resources that explain the same concept in various ways and find the one that makes the most sense to them. • Encourage students to consider creating annotations for the resources they find, summarizing the key points and evaluating the usefulness of each source.
Sense making and repetition • Mathematical texts often need to be read multiple times before they make sense to the reader. • Fluency skills include taking time to understand each sentence and diagram before moving on. This includes understanding when one may need to slow down and read the text as many times as necessary to make sense of it.	• Use graphic organizers to help students break down complex concepts into definitions, characteristics, examples and non-examples. • Compare and contrast different methods or concepts using Venn diagrams to visually organize information.

Reading Like a Mathematician

Mathematicians employ a range of reading strategies to effectively advance knowledge in their fields and navigate and comprehend the breadth of texts they encounter. By explicitly teaching the general and discipline-specific strategies mathematicians use, educators can effectively foster the development of math-specific disciplinary literacy, preparing students for the rigorous demands of academic study and real-world application. (See Table 6M.2 for a description of general reading strategies and Table 6M.3 for a description of discipline-specific reading strategies.)

Table 6M.2. General Reading Strategies Used by Mathematicians

GENERAL READING STRATEGY	**THE WHAT** — What Mathematicians Do
Identifying assumptions and prior contexts	◉ Often start reading a mathematical problem or proof by identifying key pieces of information needed for logical reasoning, including assumptions, quantities and prior arguments that the given text would be building upon. ◉ Use note-taking skills such as highlighting and making notes to assist in keeping track of important elements of a logical argument.
Visualizing and conceptualizing	◉ Focus on reading visualizations of geometric figures, graphs and algebraic expressions to understand texts and manipulate these images more effectively. ◉ Create mental, pictorial or physical models of abstract mathematical concepts to aid in comprehension and problem-solving.
Connecting to prior knowledge	◉ Rely on a deep well of prior knowledge, including known formulas, theorems and mathematical principles, to approach new problems. ◉ Connect new mathematical challenges to familiar situations, utilizing previously learned strategies and techniques.
Establishing conclusions using logic	◉ Draw conclusions by applying their knowledge of logical reasoning, including gathering and analyzing information, identifying assumptions, and utilizing previously proven results. ◉ List existing mathematical structures or proven theorems that may be applicable and anticipate how these can be extended, using logical skills to establish the truth of new conclusions.

Table 6M.3. Discipline-Specific Reading Strategies Used by Mathematicians

DISCIPLINE-SPECIFIC READING STRATEGY	**THE WHAT** — What Mathematicians Do
Questioning the text	◉ Critically engage with texts by questioning the validity of proofs, the sufficiency of evidence and the generality of mathematical results. ◉ Interrogate the assumptions underlying theorems and explore the potential impact that altering or removing these assumptions would have on the conclusions.

DISCIPLINE-SPECIFIC READING STRATEGY	**THE WHAT** — What Mathematicians Do
Evaluating evidence	◉ Evaluate the evidence presented in mathematical arguments, ensuring that each step of a proof is justified and that results are derived with logical precision. ◉ Assess the robustness of mathematical models and the accuracy of computational methods used in reaching conclusions.
Synthesizing information	◉ Synthesize information from multiple mathematical sources, integrating new findings with established theories to create a cohesive understanding or to formulate new conjectures. ◉ Recognize overarching mathematical principles that connect disparate areas of study, facilitating advancements in the field.
Analyzing logical argumentation	◉ Dissect the structure of logical arguments, identifying premises, progressions and conclusions to understand the author's reasoning. ◉ Scrutinize the coherence and completeness of logical arguments, looking for gaps in reasoning or opportunities for further exploration.

For greatest impact on students, use explicit teaching processes to engage students in what mathematicians do when reading complex texts. In addition, support students' understanding with regular opportunities to annotate, discuss and write about complex mathematics texts. (See Section 4, Explicit Instruction for Teaching Reading Strategies and Guidance for Practice: Teaching Students to Read Like a Mathematician for details about how to teach.)

GUIDANCE FOR PRACTICE

Teaching Students to Read Like a Mathematician

- **Annotate mathematical arguments:** Teach students to annotate mathematical texts by underlining key terms, writing questions in the margins, and summarizing proofs or concepts. Encourage them to make notes of patterns or conjectures before and during reading to actively engage with the material.
- **Dissect proofs and solutions:** Regularly incorporate exercises that require students to dissect and understand proofs, algorithms or solutions presented in their texts. Discuss the logical flow and encourage students to identify any gaps in reasoning or alternative approaches.
- **Explore text structures and features:** Introduce students to the typical structures of mathematical texts, such as theorem-proof formats and problem-solution methods. Highlight common features like definitions, lemmas, corollaries and examples that support the main argument. (See Section 4 for more information about teaching text structures and features.)

- **Assess validity and logic:** Engage students in evaluating the validity of the arguments and logic used in mathematical texts. Create activities that involve critiquing the strength of proofs and the reliability of conclusions drawn.
- **Synthesize concepts from different texts:** Assign tasks that encourage students to synthesize mathematical concepts across various texts, fostering their ability to draw connections and build a more comprehensive understanding of the subject matter.

Writing Like a Mathematician

In math, writing is not just a means of communication; it is also a method of thinking, exploring and contributing to mathematical ideas, computations and conclusions. Mathematicians employ a variety of writing strategies that are distinctive to their discipline and reflect the precision required to effectively convey complex ideas and findings. By teaching these writing strategies, educators help students develop the skills necessary to communicate mathematics effectively, fostering their ability to contribute to mathematical discourse and to engage with the content at a deeper level. (See Table 6M.4 for a list of key writing approaches.)

Table 6M.4. Key Writing Approaches Used by Mathematicians

KEY APPROACH	**THE WHAT** — What Mathematicians Do
Developing logical arguments	• Mathematicians employ their skills in logical reasoning to write coherent arguments that progress from premises to conclusions, ensuring that each step is justified and contributes to the overarching proof or explanation. • The rules of logic provide a structure to their writing, guiding the reader through complex reasoning and often using headings or explicit signposting to delineate different parts of the argument.
Employing precise mathematical language	• Precision in language is paramount in mathematical writing. • Mathematicians use terms and symbols that have been clearly defined and are universally understood within the mathematical community to avoid ambiguity. • They pay careful attention to the use of quantifiers (for example, “for all,” “exists”), relational symbols (for example, “=”, “<”) and other notations that are critical in conveying mathematical truths.

KEY APPROACH	**THE WHAT** — What Mathematicians Do
Writing detailed explanations	◉ While valuing brevity, mathematicians also provide detailed explanations when necessary to elucidate complex ideas or nontrivial steps in a proof. ◉ They anticipate areas where readers may require additional clarification and provide examples or further exposition to aid understanding.
Using visual and symbolic representations	◉ Mathematical writing often incorporates visual and symbolic representations such as graphs, diagrams, tables and equations. ◉ Mathematicians ensure that these are integrated seamlessly with the text and contribute to the reader's comprehension of the content. They label and reference these elements appropriately, maintaining consistency and clarity in their use.
Reflecting on and revising mathematical work	◉ Mathematicians understand that writing is a process that typically requires multiple revisions. ◉ They critically review their work for mathematical accuracy, clarity of expression and logical flow. ◉ They seek feedback from peers and mentors, using this input to refine and improve their written work.

To teach students to use mathematicians' approaches to writing, effective classrooms emphasize explicit teaching of both general and discipline-specific writing strategies and engagement in extensive discussion and collaboration. (See Section 5 for detailed recommendations. Find selected highlights of teaching practices in Guidance for Practice: Teaching Students to Write Like a Mathematician.)

GUIDANCE FOR PRACTICE

Teaching Students to Write Like a Mathematician

- **Model mathematical writing:** Demonstrate the process of writing mathematical explanations and proofs, showing students how to structure their work and use precise language.
- **Practice writing and revising:** Provide students with opportunities to write their mathematical arguments, followed by structured revision sessions where they can refine their language and logical progression. Use of a tool like a math journal can help students see mathematics around them through the writing and revision process. (See Section 5, Teaching How to Evaluate, Revise and Edit.)
- **Incorporate peer review:** Organize peer-review workshops where students can critique one another's mathematical writing, offering constructive feedback on clarity, coherence and logic. (See Section 5, Guidance for Practice: Using Talk and Collaboration to Support Writing.)
- **Analyze published mathematical texts:** Engage students in analyzing published mathematical papers or textbook sections to identify effective writing practices and to understand the conventions of the field.
- **Encourage presentation of mathematical ideas:** Have students present their mathematical arguments orally before writing, which can help clarify their thinking and organization of ideas.

Communicating Like a Mathematician

Mathematicians strive for logical clarity, whether they are proposing a new conjecture, explaining a proof or discussing the implications of a result. The goal is to make the mathematical reasoning convincing to the listener or reader, ensuring that the logical structure of the argument is transparent and follows from established principles.

Mathematicians also value dialogue. Through questioning, debate and collaborative exploration, they build upon one another's work, challenge assumptions and push the boundaries of mathematical knowledge. This interactive process is a vital part of the discipline, as it often leads to new insights, refinements of existing theories and even breakthroughs. By engaging in these practices, students learn not only to convey their own ideas but also to listen to and build upon the ideas of others, just as professional mathematicians do.

To teach students to communicate like mathematicians, effective classrooms emulate the participation structures, like debate and peer review and collaboration, that mathematicians use. (Find additional ideas in Section 4, Using Oracy to Provide Opportunities for Extended Discussion as well as in Guidance for Practice: Teaching Students to Communicate Like a Mathematician.)

GUIDANCE FOR PRACTICE

Teaching Students to Communicate Like a Mathematician

- **Facilitate mathematical discussions:** Create a classroom environment where students feel comfortable engaging in discussions about mathematical ideas. Create structures for them to ask questions, offer explanations and articulate their reasoning.
- **Develop presentation skills:** Teach students how to prepare and deliver mathematical presentations. Focus on the organization of content and use of visual aids as well as on strategies for making complex ideas more accessible.
- **Foster active listening:** Set expectations for students to listen actively when others are communicating mathematically. Active listening involves asking clarifying questions, providing feedback and thinking critically about the information being presented.
- **Promote the use of multiple representations:** Help students learn to communicate mathematical ideas using multiple representations, including verbal, symbolic, visual and numerical forms. This varied approach can aid understanding and cater to different learning styles.
- **Practice public engagement:** Provide opportunities for students to communicate mathematical concepts to nonspecialist audiences. This could be through outreach events, tutoring sessions or creating educational content for the public.

LEARN MORE

National Council of Teachers of Mathematics (NCTM)

Offers a wealth of resources, including publications like *Mathematics Teacher: Learning and Teaching PK-12* and *Journal for Research in Mathematics Education* as well as professional development opportunities and teaching materials.

Illuminations

Developed by NCTM, this resource offers a variety of lesson plans and interactive tools that align with mathematics standards and promote effective teaching practices.

Desmos

Offers a free graphing calculator and engaging activities that help students understand mathematical concepts visually and interactively.

GeoGebra

A dynamic mathematics software resource that brings together geometry, algebra, spreadsheets, graphing, statistics and calculus in one easy-to-use package.

6

Disciplinary Literacy in Science

In today's world, where science underpins innovation and inquiry, students' proficiency in scientific concepts and habits of mind leads to scientific literacy, academic and career success, and scientific grounding that is now central to individual and community life. Science sits at the heart of a community's ability to continue adapting to changing needs and creating jobs for the future.

Teaching science-specific disciplinary literacy is essential in helping students become critical thinkers and problem solvers, skills that are pivotal as careers evolve. Such skills are especially important for students who have been historically and persistently marginalized.

For a full set of literacy resources, consider earlier sections of the framework:

- Section 1 offers framing about the why and how of disciplinary literacy, as well as additional examples of disciplinary literacy in science.
- Section 2 provides concrete suggestions for developing a sense of belonging and engagement.
- Section 3 provides general guidance for supporting multilingual learners and students experiencing disability.
- Sections 4 and 5 provide detailed ideas relevant across disciplines for supporting students' reading and writing development.

Science-Specific Disciplinary Literacy

Disciplinary literacy in science involves the competencies needed to engage in scientific practices and communication as a member of the scientific community. (This is distinct from scientific literacy, which is a general understanding of science and its relevance to everyday life.) It focuses on how scientists communicate within their field and how they construct, interpret and critique scientific knowledge. This includes understanding and using the language, tools and conventions specific to science, such as:

- Employing the practices that scientists use in their work, such as asking questions and defining problems, developing and using models, experimenting, constructing explanations, engaging in argument from evidence, and communicating information.
- Reading and interpreting various genres of scientific texts, such as research articles, lab reports and technical papers.
- Writing scientifically, which includes structuring arguments, using evidence, and adhering to specific formats and styles.
- Participating in scientific discussions, understanding the norms of scientific communication, and being able to critically evaluate and constructively contribute to scientific dialogue.

SELECT LIST OF SCIENCE CAREER PATHWAYS

- Medical research.
- Medical practice and technical support.
- Environmental science.
- Forestry and wildlife management.
- Engineering.
- Scholarship and teaching.

HABITS OF MIND OF SCIENTISTS

- Curiosity and inquiry.
- Skepticism and critical thinking.
- Objectivity and open-mindedness.
- Systematic observation and attention to detail.
- Persistence and resilience.
- Creativity and innovation.
- Ethical responsibility and reflection.

Science-specific disciplinary literacy practices are characterized by the understanding of complex scientific concepts, the critical analysis of experimental data and the ability to construct well-founded arguments based on evidence.[199] The uniqueness of science-specific disciplinary literacy lies in its focus on how knowledge is generated, validated and communicated in the scientific community.[200]

Students learn to engage with the language of science, which includes technical vocabulary, genre-specific text structures and the precise use of symbols and formulas. They also develop the capacity to navigate scientific texts that present hypotheses, describe methodologies, report results and draw conclusions with a level of sophistication that is particular to the discipline.

Further, science-specific disciplinary literacy empowers students to actively participate in the discourse of science and to create explanations within their investigation of authentic phenomena. It invites them to join the conversation as emerging scientists who can question, critique and contribute to the scientific body of knowledge. By being proficient in this form of literacy, students gain not only access to scientific content but also the tools to think critically about scientific claims and to participate in the ongoing dialogue that propels scientific discovery forward.

Learning to read like a scientist supports adolescents' critical thinking skills by engaging them in interpreting scientific claims reported in the media. Students learn to seek out the underlying research study and consider the degree to which the media's summary accurately conveys the research findings, including whether the summary includes important information such as the study's qualifications and whether findings have been replicated in other research.

The literacy skills and habits of mind fostered in science are crucial for careers that rely on precise technical writing and data interpretation. Many of these fields require the ability to communicate complex concepts both to other members of the profession as well as to members of the public who may not be well versed in the discourse of science.

To increase the relevance of literacy learning in science, educators can provide information about potential careers that rely on scientific communication, such as forestry professionals communicating the scientific rationale behind forest management practices or structural engineers discussing possible trade-offs in material strength versus cost for a bridge design. This approach builds connections across disciplines and increases students' exposure to the many opportunities that await them after school.

GUIDANCE FOR PRACTICE

Connecting Science-Specific Disciplinary Literacy Skills to Careers

To support students in seeing the relevance of science disciplinary literacy to their futures, effective classrooms connect these skill sets to career opportunities through a variety of activities. These include:

- Engaging students in analyzing logical structures and language used in reports of medical studies, engineering blueprints and epidemiological analyses.
- Inviting professionals such as nurses, inventors of biotechnology products and highway engineers to describe how they use reading and writing to explain important scientific information to patients, investors or legislators.
- Inviting students to write texts that emulate authentic structures and purposes in their own writing, preparing them for career-specific communication tasks including research abstracts, lab reports and environmental impact statements.

Accessing Scientific Texts

The complexity of scientific texts arises from a combination of factors that are intrinsic to the way scientific knowledge is communicated. To help students learn to navigate and comprehend scientific literature, educators can demystify the content and structure of the texts, make the texts more accessible to learners at different levels and explicitly teach strategies that help students access them. (See Table 6S.1 for key text features and teaching strategies.)

Table 6S.1. Strategies for Teaching Key Features of Scientific Texts

THE WHAT — Key Features of Scientific Texts	**THE HOW** — Teaching Strategies to Read Scientific Texts
Specialized vocabulary • Scientific texts often contain a high density of technical terms and jargon that are crucial for precise communication of scientific concepts.	• Engage students in authentic instruction in which they begin to develop an understanding of the meaning of the specialized vocabulary even before they know the term. Encourage students to use their everyday and home language to communicate about the scientific concepts before introducing any specialized vocabulary. • Clarify the purpose for reading text beyond just learning about the topic—for example, gathering evidence for a claim, revising a model or gathering background research for an experiment. • Have students become familiar with Latin and Greek root words and identify those roots as they encounter them in scientific terms or context. • Encourage the use of context clues to infer the meaning of unknown words. • Create an interactive word wall, collecting both general words used in science and engineering practices (e.g., "analyzing data") as well as specialized language associated with units of study (e.g., "endothermic" and "exothermic"). Have students use and engage with vocabulary in meaningful ways, as scientists do.[201] Consider multiple text options that include scientific journals, trade books, online resources and listening options such as scientific podcasts.

Conceptual density
• The ideas presented in scientific texts are typically abstract and complex and contain layered information and interconnected ideas. Often, scientific texts assume a certain level of background knowledge.
	• Break down complex paragraphs into simpler statements or bullet points.
	• When prerequisite background knowledge is central to the focus of instruction, ensure that students have explored and developed the background knowledge by engaging in the practices of science and engineering prior to reading texts.
	• When prerequisite background knowledge is not related to learning progressions:
	  ◦ Use analogies and real-life examples to illustrate abstract concepts.
	  ◦ Facilitate structured small-group discussions with a clear purpose to allow students to explain concepts to one another.
	  ◦ Provide graphic organizers to help students visualize and connect ideas.

THE WHAT — Key Features of Scientific Texts	**THE HOW** — Teaching Strategies to Read Scientific Texts
Data interpretation • Scientific texts frequently include data in various forms such as charts, graphs, tables and equations. Scientists are adept at interpreting these data and understanding their significance within the context of the study or argument being presented.	• Teach students how to read and create charts, graphs and tables. • When possible, use data from experiments conducted in class for authentic engagement. When using secondary datasets, ensure that students understand the purpose of the data and how they were collected. • Focus instruction on real-world phenomena or problems that intrinsically motivate students when asking students to interpret data and justify their reasoning as they explain the phenomena or solve the problems. • Introduce basic statistical concepts to enhance understanding of data significance.
Argumentation structure • Scientific texts often follow a logical structure to provide explanations aimed at illuminating the nature of particular phenomena, predicting future events or making inferences about past events.[202]	• Familiarize students with the sections in sample texts. • Use argumentation toolkits, templates and outlines to help students structure their own scientific writing and critical thinking for analysis and reflection. • Practice identifying and critiquing the claim, evidence and reasoning or conclusions in scientific arguments. • Discuss the purpose of each section of the text and how these connect to form a cohesive argument (e.g., question, claim, evidence and reasoning).
Use of passive voice • The passive voice is commonly used in scientific writing to maintain objectivity and focus on the research rather than the researcher.	• Explain the rationale behind the use of passive voice in scientific writing. • Provide exercises that contrast passive and active voice for clearer understanding. • Rewrite sentences in passive voice to active voice, and vice versa, as a class activity.
Intertextuality • Scientific texts often reference previous studies, theories or findings, requiring readers to have some prior knowledge or to seek additional sources for a full understanding of the content.	• Teach students how to use citations and references to track down original sources. • Discuss how scientific knowledge builds on previous findings. • Encourage wider reading about the topic to build background knowledge.

THE WHAT — Key Features of Scientific Texts	**THE HOW** — Teaching Strategies to Read Scientific Texts
Genre variety • There are many different types of scientific texts, including empirical studies, literature reviews, theoretical articles and case studies, each with its own language features and purposes.	• Expose students to different genres of scientific texts through varied reading assignments. • Discuss the purpose and audience of different types of texts. • Analyze the language features and structure unique to each genre.
Implicit assumptions and conventions • Scientific discourse relies on shared understanding of certain conventions, such as the meaning of statistical significance or the assumptions underlying experimental design. Familiarity with such concepts is essential for readers to fully grasp the implications of a scientific text.	• Address common scientific conventions explicitly in class discussions. • Use examples to show how assumptions can influence experimental design and interpretation. • Teach the meaning of terms like "statistical significance" through authentic engagement or simulations.

By equipping students with the tools to navigate the complexities of scientific texts, educators empower them to become active participants in scientific discourse. This empowerment is crucial for adolescents' personal growth, academic achievement and future career prospects. It also prepares them to be critical thinkers and informed members of their community, capable of making reasoned decisions about scientific matters that impact their lives and the world at large.

Reading Like a Scientist

Scientists employ a range of reading strategies to effectively navigate and comprehend the breadth of texts they encounter in their work. By explicitly teaching the general and discipline-specific strategies scientists use, educators can effectively foster the development of science-specific disciplinary literacy, preparing students for the rigorous demands of academic study and real-world application. (See Table 6S.2 for general reading strategies and Table 6S.3 for discipline-specific reading strategies used by scientists.)

Table 6S.2. General Reading Strategies Used by Scientists

GENERAL READING STRATEGY	**THE WHAT** — What Scientists Do
Making predictions and hypotheses	◉ Prior to and during reading, scientists make predictions about the research outcomes or the direction of the argument. ◉ Scientists form hypotheses based on evidence from abstracts or introductions and then read to confirm or refute these initial thoughts.
Visualizing and conceptualizing	◉ When reading about processes or complex systems, scientists often create mental images or models to better understand the text. ◉ Scientists visualize data presented in graphs and charts to internalize and interpret the information.
Connecting to prior knowledge	◉ Scientists draw upon their extensive background knowledge to make sense of new information. ◉ Scientists integrate new findings with what is already known, looking for patterns or discrepancies.

Table 6S.3. Discipline-Specific Reading Strategies Used by Scientists

DISCIPLINE-SPECIFIC READING STRATEGY	**THE WHAT** — What Scientists Do
Questioning the text	◉ Approach texts with a critical mindset, constantly asking questions about the methods, results and conclusions presented. ◉ Seek to understand the research question, the hypothesis and the significance of the study.
Evaluating evidence	◉ Critically evaluate the evidence presented, as a fundamental reading strategy. ◉ Assess the quality of the research design, the appropriateness of the methods and the validity of the conclusions.
Synthesizing information	◉ Synthesize information from multiple sources, combining new insights with existing knowledge to generate a broader understanding or to identify new research directions.

DISCIPLINE-SPECIFIC READING STRATEGY	**THE WHAT** — What Scientists Do
Analyzing argumentation	◉ Analyze the argument structure within the text as an integral part of scientific reading, discerning the claims, evidence and reasoning. ◉ Evaluate the strength of the argument, looking for logical coherence and the sufficiency of evidence to support the claims. ◉ Consider alternative explanations and counterarguments, weighing those against the author's argument to form a balanced judgment.

These reading strategies reflect the complex cognitive activities that scientists perform to advance knowledge in their fields. For the greatest impact on students, use explicit teaching processes to engage students in what scientists do when reading complex texts. In addition, support students' understanding with regular opportunities to annotate, discuss and write about complex scientific texts. (For details about how to teach, see Section 4, Explicit Instruction for Teaching Reading Strategies as well as Guidance for Practice: Teaching Students to Read Like a Scientist.)

GUIDANCE FOR PRACTICE

Teaching Students to Read Like a Scientist

- **Demonstrate annotations:** Demonstrate how to annotate scientific texts by underlining key terms, writing questions in the margins and summarizing sections. Encourage students to make predictions based on headings and visuals before reading and then confirm or adjust their predictions as they go.
- **Interpret information in charts and graphs:** Regularly incorporate exercises that require students to interpret and discuss information presented in charts, graphs and tables. Embed these exercises in instruction focused on answering students' own questions about real-world phenomena or problems to make these exercises relevant and engaging.
- **Introduce typical scientific text structures:** Introduce students to the typical structures of scientific texts and highlight signal phrases that indicate transitions and organizational patterns. Provide graphic organizers that match these structures to help students follow the logical flow of the text. (See Section 4 for more information about teaching text structures and features.)
- **Evaluate credibility and evidence:** Engage students in evaluating the credibility of different sources and the quality of evidence presented in scientific arguments. Create classroom discussions or debates about controversial or cutting-edge scientific topics, facilitating students to back up their positions with text-based evidence.

- **Synthesize information from texts:** Assign research projects that require students to synthesize information from multiple scientific texts, fostering their ability to draw connections and form a comprehensive understanding. Use jigsaw activities where each student or group becomes an expert on one source and then shares their knowledge, collaboratively building a multifaceted view of the topic.

Writing Like a Scientist

In the realm of science, writing is not just a means of communication; it is also a method of thinking, exploring and contributing to the scientific body of knowledge. Scientists employ a variety of writing strategies that are distinctive to their discipline, reflecting the rigor and precision required to effectively convey complex ideas and findings. (See Table 6S.4 for key writing approaches used by scientists.)

Table 6S.4. Key Writing Approaches Used by Scientists

KEY APPROACH	**THE WHAT** — What Scientists Do
Adherence to conventional structures	• Scientists typically follow established formats, such as gathering information, constructing explanations with evidence and describing implications for the field, providing a clear and systematic way of presenting research. • These formats help in organizing content logically and guiding the reader through the study's progression.
Precision and clarity	• Scientists typically use precise language to avoid ambiguity and ensure that the meaning is clear to the reader. They achieve clarity in their writing through the careful selection of words, the use of unambiguous terms and the concise conveyance of information.
Technical vocabulary	• The use of specialized terminology is a hallmark of scientific writing, allowing for brevity and specificity. However, scientists balance the use of jargon with the need for accessibility, defining terms where necessary for clarity.
Documentation of methodologies	• A critical aspect of scientific writing is the detailed description of methods and procedures, enabling other scientists to replicate experiments or understand the approach to data collection and analysis.

KEY APPROACH	**THE WHAT** — What Scientists Do
Data presentation and interpretation	◉ Effective scientific writing involves presenting data in a clear and interpretable manner, often accompanied by visual aids such as tables, graphs and charts. The interpretation of data is carefully constructed to follow logically from the presented results and to support or refute the research hypotheses or answer the questions.
Presentation of argumentation based on evidence	◉ Scientists build arguments grounded in empirical evidence, drawing conclusions that are supported by the data analyzed. The arguments are structured to address potential counterarguments and to situate the findings within the existing body of scientific knowledge.
Articulating the significance	◉ Scientists articulate the significance of their findings within the broader context of their field. They explain how their research contributes to existing knowledge and its potential implications for future studies or applications.
Reflection on limitations and implications	◉ Honest reflection on the limitations of the study is a key component of scientific writing, as it provides context for the results and indicates areas for future research. Discussing the implications of the findings, whether for theory, practice or policy, is also integral to the communication of scientific work.
Ethical considerations	◉ Ethical writing is paramount in science, with proper attribution of sources, transparency in reporting and integrity in the presentation of results being essential practices.
Revising and peer review	◉ Writing in science is an iterative process that involves multiple revisions to refine the content and presentation. Peer review is a critical strategy for ensuring the quality and credibility of scientific writing, providing an opportunity for feedback and improvement.

By being proficient in these writing strategies, scientists effectively contribute to the growth and dissemination of scientific knowledge. Scaffolding these strategies for students nurtures the development of science-specific writing skills and prepares them for future academic and professional endeavors in the sciences.

To teach students to use scientists' approaches to writing, effective classrooms emphasize explicit teaching of both general and discipline-specific writing strategies and engagement in extensive discussion and collaboration. (See Section 5 for detailed recommendations. Find selected highlights of teaching practices in Guidance for Practice: Teaching Students to Write Like a Scientist.)

GUIDANCE FOR PRACTICE

Teaching Students to Write Like a Scientist

- **Emulate models:** Use model texts as examples of the structure of scientific papers to analyze and emulate. If students are not able to access original scientific reports, give them access to Adapted Primary Literature, which consists of texts adapted from original research to make them more accessible to students.
- **Use peer revision and editing:** Use peer revision and editing sessions to help students learn to identify and eliminate jargon that could confuse readers and to encourage one another to use technical vocabulary when appropriate. Similarly, peer revision can be used to critique one another's methods for clarity and completeness. (See Section 5, Guidance for Practice: Using Talk and Collaboration to Support Writing.)
- **Teach logical argument:** Teach the construction of logical arguments and the use of evidence to support conclusions and have students critique examples for strengths and weaknesses.
- **Teach citation practices:** Provide instruction on how to use citation formats common in scientific writing, including why acknowledging the work of others is essential to the integrity of scientific communication.

Communicating Like a Scientist

Disciplinary discourse in the science classroom includes text-based discussions using a variety of participation structures based on relevant and engaging inquiry that moves students beyond literal understandings to critical and inferential thinking.

It is important for educators to model how to engage in productive discussions[203] in science and engineering, making visible what the common purposes or outcomes of discussion and dialogue are. Simultaneously, it is vital to attend to issues of equity, power and justice.[204]

For greatest impact, facilitate student engagement with real-world phenomena and problems that motivate students to seek information, including from texts. These activities encourage students to analyze data, draw conclusions and communicate their findings, developing a deep understanding of scientific concepts and promoting critical thinking skills in science classes.

Effective classrooms provide modeling and instruction to:

- Teach students how to generate their own investigative questions.
- Invite students to read and discuss the findings and significance of multiple scientific accounts or explanations of a similar problem or phenomenon (e.g., comparing findings from two studies on the same question or evaluating differing design solutions to the same problem).

- Engage students in discussion about digital and media literacies as used in science and engineering practices.
- Engage students in dialogue that uses digital tools to share and communicate ideas.

(For additional ideas and strategies, see Section 4, Using Oracy to Provide Opportunities for Extended Discussion and Table 6S.5.)

Table 6S.5. Classroom Elements for Teaching Students to Communicate Like Scientists

THE WHAT— Classroom Elements	**THE HOW** — Examples
Participation structures	Individuals, pairs, small groups and whole group.
Authentic scientific question	Why don't antibiotics work like they used to? How might this impact my family or community?
Purposes of discussion and dialogue	• Forming questions and hypotheses about real-world phenomena and problems. • Defining engineering problems. • Triangulating data. • Testing hypotheses and forming conclusions based on analysis. • Comparing models. • Exploring how to optimize a design solution.* • Describing reasoning to justify explanations. • Critiquing arguments. • Providing feedback.
Phenomena-based learning activities	Connect text to: • Authentic questions. • Experiments and investigations. • Problem-solving tasks.

*Modified from *Gather, Reason, Communicate Sequence* (Moulding et al., 2015)[205]

LEARN MORE

Annenberg Learner, Reading and Writing in the Disciplines (Big Ideas in Literacy—Science)

Sample units on disciplinary literacy in science provide some frameworks and strategies for developing science literacy.

Sustaining Disciplinary Literacy in Science (video)

This 50-minute video features Dr. Alexis Patterson Williams presenting on "Sustaining Disciplinary Literacy in Science: A Transformative, Just Model for Teaching the Language of Science."

Council of Chief State School Officers, Using Crosscutting Concepts to Prompt Student Responses (pp. 12-15)

This resource supports educators in understanding and developing formative assessment prompts aligned to three-dimensional student science performances. The prompts connect to lesson components and instructional strategies that are consistent with state standards and current research for science education.

Framework for K-12 Science Education: Practices, Crosscutting Concepts, and Core Ideas (pp. 74-79)

The framework identifies eight practices that are considered essential for learning science and engineering in grades K-12. The eighth practice is obtaining, evaluating and communicating information.

The Lawrence Hall of Science, Building a Culture of Argumentation

This resource provides teachers with access to the Argumentation Toolkit, which helps teachers understand and teach scientific argumentation.

Incorporating Scientific Argumentation Into Your Classroom

This 105-minute course is designed to help educators think about how the practice of argumentation relates to the practice of explanation, research- and practice-based strategies that can foster rich forms of student argumentation, and how argumentation opportunities can be implemented in more equitable ways.

Minnesota STEM Teacher Center, Literacy in Science

This resource highlights the importance of pairing science and literacy and provides suggested strategies for integrating science and literacy instruction.

National Academies, Literacy for Science

This report considers design options for curricula and courses that provide aligned support for students to develop competencies in reading and communicating. *Literacy for Science* will be a useful point of reference for anyone interested in the opportunities and challenges of overlapping science and literacy standards to improve the learning experience.

Disciplinary Literacy Through the Lens of the Next Generation Science Standards

This journal article explores disciplinary literacy through the lens of the Next Generation Science Standards (NGSS) and argues that requirements for discipline-appropriate literacy abilities are already embedded in national standards for English language arts, mathematics, science and social studies.

Why You Should Stop Pre-Teaching Science Vocabulary and Focus on Students Developing Conceptual Meaning First

This brief provides guidance on how to focus on students developing conceptual meaning rather than pre-teaching science vocabulary.

6

Disciplinary Literacy in Social Sciences

The social sciences[206] in Oregon encompass the study of human societies, their development and their interactions over time and space. Proficiency in social science equips students with the tools for critical analysis, informed citizenship and engagement with global issues. As such, teaching disciplinary literacy in social science is crucial for preparing students to navigate and contribute to an ever-changing world.

For a full set of literacy resources, consider earlier sections of the framework:

- Section 1 offers framing about the why and how of disciplinary literacy, as well as additional examples of disciplinary literacy in social science.
- Section 2 provides concrete suggestions for developing a sense of belonging and engagement.
- Section 3 provides general guidance for supporting multilingual learners and students experiencing disability.
- Sections 4 and 5 provide detailed ideas relevant across disciplines for supporting students' reading and writing development

Literacy in Social Sciences

The social science curriculum equips students with the essential tools to analyze, create and communicate complex ideas, fostering informed, articulate and adaptable individuals who become contributing members of our democracy. To achieve these aims, social science classrooms focus on developing four broad literacy skill sets:

- Critical reading and analysis enable students to compare conflicting historical interpretations, correlate geographic information, debate constitutional principles and evaluate economic theories to form well-reasoned arguments about complex social issues. This skill set involves evaluating sources for credibility, bias and relevance, as well as synthesizing information from multiple texts.
- Discipline-specific terminology allows students to communicate complex concepts succinctly and accurately. Educators teach students the language of the disciplines, fostering their ability to engage with texts and discussions at a sophisticated level.
- Evidence-based argumentation encourages students to build and defend arguments using a variety of evidence. Students learn to analyze data, compare historical events, and argue viewpoints with evidence gathered from primary and secondary sources.
- Engaging with a variety of sources and perspectives helps students develop a well-rounded understanding of issues past and present. Through the examination of maps, charts, artifacts, interviews, multimedia sources and secondary sources from multiple perspectives, students gain the ability to critique and interpret diverse views, fostering a more inclusive and comprehensive understanding of social phenomena.

SELECT LIST OF SOCIAL SCIENCE CAREER PATHWAYS

- Law.
- Economics.
- Government and public service.
- Museum management and education.
- Journalism.
- Human resources.
- Scholarship and teaching.

The skills and habits of mind fostered in the social sciences support the deep disciplinary work of historians, sociologists and economists as well as the work of many other professionals. All four skill sets are central to the career pathways that emphasize analysis of multiple perspectives and data, development of compelling arguments, and communication with a range of audiences.

To increase the relevance of literacy learning in the social sciences, educators can provide information about potential careers that rely on social science communication. Social science communication could be collaboratively taught with CTE educators, thus building connections across disciplines and increasing adolescents' exposure to the many opportunities that await them after school.

GUIDANCE FOR PRACTICE

Connecting Social Science Disciplinary Literacy Skills to Careers

To help students see that literacy in the social sciences is relevant to their futures, effective classrooms connect the skill sets to career opportunities through a variety of activities. These include:

- Inviting professionals in law and government to share how they use critical reading as well as argumentation, technical writing and presentation skills in their roles. For example, human resources professionals can explain findings from psychological research that demonstrate the benefits of Employee Resource Groups. Fire professionals can use maps to describe evacuation orders and wildfire behavior.
- Engaging students in studying a specific fiscal policy, then using what they have learned to analyze existing data to develop an argument about an economic policy under consideration. To communicate their conclusions, students use reasoning from economic theories they have learned, consider alternative perspectives and use specific language drawn from economics.
- Inviting students to write policy briefs, opinion editorials that draw on legal or historical analysis and museum exhibit descriptions.

Social Science-Specific Disciplinary Literacy Practices

Social science-specific disciplinary literacy practices are distinguished by their focus on critical source analysis, on interpretation of data and evidence, and on the ability to construct coherent, evidence-supported arguments. Centrally, the emphasis is on social science processes and conventions—how evidence is selected, used, interpreted and communicated.

Social science-specific disciplinary literacy enables students to understand and apply discipline-specific methodologies. These include analyzing primary sources and corroborating evidence in history, interpreting maps and spatial data in geography, evaluating the structure and function of governmental systems in civics, and modeling economic trends and analyzing market forces in economics.

HABITS OF MIND OF SOCIAL SCIENTISTS

- Curiosity and inquiry.
- Critical thinking.
- Open-mindedness and flexibility.
- Attention to context.
- Pattern recognition and synthesis.
- Evidence-based decision-making.

Thoughtfully applying theoretical frameworks to real-world situations and historical contexts empowers students. They learn to cultivate critical thinking about human societies, their development and their interactions in historical and contemporary contexts, enabling students to engage more deeply with the complexities of the social world.

Learning to read like a social scientist helps students discern the quality and depth of social science content presented across media. Students learn to question the interpretation of events in reports and media, to consider the validity of such interpretations based on evidence, and to appreciate the diverse critical perspectives that can inform our understanding of societal issues and their implications.

Accessing Social Sciences Texts

The complexity of texts within social science classrooms reflects multiple approaches to analysis, interpretation and argumentation. Students learn to navigate the intricacies of source materials and data, disciplinary concepts, and depth of content that these texts present. (Table 6SS.1 outlines dimensions of social science text complexity and strategies for teaching them.)

Table 6SS.1. Strategies for Teaching Key Features of Social Science Texts

THE WHAT — Key Features of Social Science Texts	**THE HOW** — Teaching to Read Complex Social Science Texts
Quantitative aspects of text complexity • Vocabulary specific to social sciences (e.g., economic terms, political jargon). • Sentence length and syntactic complexity in academic articles. • Data density in charts, graphs and tables.	• Provide targeted vocabulary instruction relevant to each social science discipline. • Use graphic organizers to break down and analyze complex sentence structures. • Teach students to interpret graphs and data and to understand their relevance to the text's argument.
Qualitative aspects of text complexity • Primary source documents with historical language and context. • Theoretical texts requiring background knowledge in social science theories. • Diverse perspectives and interdisciplinary texts.	• Contextualize primary sources by providing historical background and discussing the source's significance. • Use scaffolding strategies to introduce and explore complex social science theories. • Encourage comparative analysis of texts from different disciplines to highlight interdisciplinary connections.
Reader and task considerations • Students' prior knowledge and experiences with social science concepts. • The purpose of reading assignments (e.g., to inform, analyze or critique). • The complexity of tasks associated with the texts (e.g., source analysis, research projects).	• Activate prior knowledge through pre-reading discussions and activities. • Articulate the purpose of reading tasks and provide models of expected outcomes. • Include guiding questions to identify important ideas. • Design tasks that are appropriately challenging and scaffolded to guide students through complex assignments.

THE WHAT — Key Features of Social Science Texts	**THE HOW** — Teaching to Read Complex Social Science Texts
Contextual elements of text complexity • Historical, cultural and social contexts of source material. • Authorial perspective and potential biases in texts. • Relevance of texts to contemporary issues and students' lives.	• Incorporate discussions on the historical, cultural and social contexts of texts. • Teach critical literacy skills to identify and evaluate authorial bias and perspective. • Connect texts to current events and issues relevant to students to enhance engagement and understanding.

Reading Like a Social Scientist

Social scientists employ reading strategies that embody the complex cognitive processes they use to deepen their understanding of historical, societal and economic issues and to critically analyze the content they encounter. In effective classrooms, educators equip students to conduct sophisticated analysis and deepen their understanding of past and present events by explicitly teaching the why, when and how of social scientists' reading strategies.

For greatest impact on students, use explicit teaching processes to engage students in what social scientists do when reading complex texts. (See Table 6SS.2 and Section 4 for general reading strategies and teaching approaches. See Table 6SS.3 for discipline-specific reading strategies and teaching approaches.)

Table 6SS.2. Teaching General Reading Strategies Used by Social Scientists

THE WHAT — General Reading Strategies and What Social Scientists Do	**THE HOW** — Teaching Strategies
Connecting to prior knowledge • Use their understanding of historical events, cultural practices and economic theories to contextualize new information. • Relate new findings to their existing knowledge base, allowing them to construct more informed interpretations.	• Implement "think-pair-share" activities where students reflect on what they already know about a topic before discussing with a partner and sharing with the class. • Encourage students to "talk to the text,"[207] a strategy where students engage in a dialogue with the text by annotating questions, comments, connections and reflections in the margins, fostering active reading and deeper comprehension. • Assign reflective reading prompts that encourage students to consider their existing knowledge, their personal reactions to texts, the implications of research findings and the relevance to contemporary issues.

THE WHAT — General Reading Strategies and What Social Scientists Do	**THE HOW** — Teaching Strategies
Visualizing and conceptualizing • Visualize patterns and conceptual frameworks when examining geographic data or sociological and economic trends to better comprehend the information. • Often create or refer to maps, charts and graphs to illustrate complex social phenomena.	• Create mind maps or concept webs to visually represent relationships between historical events, geographic features or economic concepts. • Use graphic organizers like timelines, Venn diagrams or cause-and-effect charts to help students visualize complex social science ideas.
Making predictions and hypotheses • Make predictions about societal behaviors and outcomes based on their analysis of data and trends. • Test these hypotheses through further reading, research and empirical observation.	• Engage students in "what if" scenarios, asking them to predict potential outcomes of historical events if certain factors had been different. • Encourage students to form hypotheses about economic trends based on given data, then guide them in researching to confirm or revise their predictions.

Table 6SS.3. Teaching Discipline-Specific Reading Strategies Used by Social Scientists

THE WHAT — Discipline-Specific Reading Strategies and What Social Scientists Do	**THE HOW** — Teaching Strategies
Questioning the text • Critically examine texts, questioning the reliability of sources, the validity of arguments and the completeness of data presented. • Consider the historical and cultural context in which a text was produced to understand its perspective and limitations.	• Teach students to generate discipline-specific questions when reading historical documents, such as "What was the author's role in this event?" or "How might the time period have influenced the author's perspective?" • Select a current news article on a social issue. Have students generate and answer questions about the article's sources, potential biases, and any missing perspectives or data. Encourage students to research additional sources to fill in gaps and critically evaluate the article's arguments.

THE WHAT — Discipline-Specific Reading Strategies and What Social Scientists Do	**THE HOW** — Teaching Strategies
Evaluating evidence • Critically examine evidence, such as statistical data and historical documents, as a key strategy. • Assess the quality and relevance of evidence in supporting the text's claims and arguments.	• Provide students with multiple sources about a historical event or social issue, including primary documents, academic articles and popular media. Students evaluate each source's credibility, bias and use of evidence, then discuss how these factors influence the interpretation of the event or issue. • Present students with conflicting sets of statistics on a social or economic topic. Have students analyze the data collection methods, sample sizes and potential biases, then determine which dataset is more reliable and why. As part of this, teach students to critically evaluate data, by identifying biases, questioning methodologies and understanding the implications of statistical results.
Synthesizing information • Synthesize information from various texts and data sources to develop a comprehensive understanding of complex issues. • Identify connections between different areas of social science, noting how economic conditions, political systems and social structures interrelate.	• Assign student groups a current global issue (e.g., climate change, immigration) and have them research the issue's economic, political and social aspects, using diverse sources. • Have students examine a significant historical event (e.g., the Industrial Revolution) using primary and secondary sources from various disciplines. Have students then create a mind map or infographic that synthesizes how economic changes, political decisions and social transformations interconnected during this period.
Analyzing author's purpose and perspective • Examine how an author's choices of content, presentation and style contribute to the overall impact and purpose of a text. • Analyze these elements to discern the author's intent—whether to persuade, inform, debate or present research findings.	• Assign students to analyze news articles on a current social issue from various sources, identifying main claims, word choices and author background. Have students present their findings, explaining how the author's purpose and perspective influenced the presentation of information. • Teach students to identify and evaluate the author's intent in civic documents, considering factors such as the historical context, intended audience and potential political motivations.

THE WHAT — Discipline-Specific Reading Strategies and What Social Scientists Do	**THE HOW** — Teaching Strategies
Exploring multiple interpretations and critical perspectives • Recognize that texts can yield a variety of interpretations. They thus engage with scholarship through different theoretical lenses, such as feminist, Marxist, neoliberal or constructivist frameworks. • Value the examination of texts from multiple angles, fostering an understanding that social phenomena can be viewed through diverse scholarly perspectives, each offering unique insights.	• Assign students to analyze a significant historical event (e.g., the Industrial Revolution) through different theoretical lenses. Have students research and present how their assigned lens interprets the event, its causes and its consequences. Conclude with a class discussion comparing these perspectives and reflecting on how each provides unique insights. • Assign students to research and argue for or against a current social or economic policy from different theoretical standpoints (e.g., neoliberal, social democratic, libertarian). Conduct a structured debate where students must present arguments consistent with their assigned perspective. After the debate, lead a reflection on how different frameworks lead to varied interpretations of the same policy's potential impacts and ethical implications. • Facilitate classroom discussions and assignments that prompt students to compare and contrast different perspectives, theories and interpretations within the social sciences.

Writing Like a Social Scientist

When writing, social scientists engage in structured, evidence-based conversations, articulating findings and arguments with clarity and precision. This involves a deep understanding of research methodologies, a critical use of data and the communication of complex ideas to a wide audience. (See Table 6SS.4 for a list of key writing approaches.)

Table 6SS.4. Key Writing Approaches Used by Social Scientists

KEY APPROACH	**THE WHAT** — What Social Scientists Do
Develop a clear thesis or research question	Articulate a central argument or inquiry that guides their research and writing, framing their investigation within the broader context of the field.

KEY APPROACH	**THE WHAT** — What Social Scientists Do
Organize and structure arguments	Effectively organize ideas—a crucial skill in social science writing—using outlines and frameworks to present arguments logically and coherently.
Integrate evidence and data	Incorporate evidence and data to support their arguments, critically evaluating sources and presenting findings accurately.
Use discipline-specific conventions	Develop proficiency in the American Psychological Association (APA), Modern Language Association (MLA) or Chicago style guide, a skill necessary for proper citation and presentation in social science writing. Citations both acknowledge the contributions of other researchers and situate the research presented in the context of the broader field of study.
Communicate findings to a broad audience	Often aim to make their writing accessible to readers outside their immediate field, explaining (or replacing) specialized language and contextualizing their findings within larger societal issues.
Reflect on ethical considerations	Engage in ethical reflection, which is key in social science writing, as researchers consider the implications and responsibilities of their work.

Effective social sciences classrooms equip students with specific writing approaches that empower them to analyze and synthesize information. By being proficient in these writing strategies, students become adept at crafting rigorous research papers, policy analyses and reflective essays, akin to the work of professional social scientists. The careful development of writing skills lays the foundation for a new generation of informed researchers, thoughtful policymakers and engaged citizens.

To teach students to use social scientists' approaches to writing, effective classrooms emphasize explicit teaching of general and discipline-specific writing strategies and extensive engagement in discussion and collaboration. (See Section 5 for detailed recommendations. Find selected highlights of teaching practices in Guidance for Practice: Teaching Students to Write Like a Social Scientist.)

GUIDANCE FOR PRACTICE

Teaching Students to Write Like A Social Scientist

- **Model the research process:** Demonstrate the steps involved in conducting social science research, from formulating a question, to collecting and analyzing data, to writing and revising the report or paper.
- **Emphasize the importance of drafting and revising:** Encourage students to see writing as a process that involves multiple drafts and revisions, each improving the clarity and cohesiveness of their argument. (See Section 5, Teaching How to Evaluate, Revise and Edit.)
- **Provide opportunities for peer feedback:** Create a classroom environment where peer review is a regular practice, helping students learn to give and receive constructive feedback on their writing. (See Section 5, Guidance for Practice: Using Talk and Collaboration to Support Writing.)
- **Foster the use of technology:** Integrate digital tools that facilitate research (for example, digital archives, publicly available social science datasets), data analysis (for example, qualitative and quantitative software), writing and collaboration (for example, document-sharing platforms).
- **Address AI in academic writing:** Teach students to critically evaluate AI-generated content and to use AI tools ethically as research aids rather than substitutes for original thinking. Emphasize the importance of citing AI sources and maintaining academic integrity in an era of easily accessible AI writing assistants. (See Section 5, Using Digital Tools, Including Generative AI, to Support Writing Instruction.)

Communicating Like a Social Scientist

Communication in the social sciences involves conveying complex ideas, research findings and theoretical arguments in a clear and accessible manner. To communicate like a social scientist, students must learn to articulate their insights with precision (including references to data), engage in academic discourse and present their work in various formats, including oral presentations and digital media.

Fostering communication skills means involving students in discussions and debates that reflect the collaborative and often contentious nature of social inquiry, where active listening, respectful exchange and critical engagement with differing viewpoints are essential. It also requires teaching students the art of structured argumentation, the effective use of visual aids like charts and graphs, and the conventions of presenting research findings.

Ultimately, communicating like a social scientist enables students to contribute to the broader discourse within a pluralistic democracy and to apply their knowledge in practical, real-world contexts. It sharpens their ability to analyze complex social issues, to challenge preconceived notions and to engage with others in discussions that promote understanding and problem-solving. As students refine their communication skills, they become more effective in sharing their research and perspectives, positioning themselves as informed citizens and contributors to a healthy and vibrant democracy.

(For additional ideas and strategies, see Section 4, Using Oracy to Provide Opportunities for Extended Discussion. Also see Table 6SS.5, Classroom Structures for Teaching Students to Communicate Like Social Scientists.)

Table 6SS.5. Classroom Structures for Teaching Students to Communicate Like Social Scientists

THE WHAT — Communicating Like a Social Scientist	**THE HOW** — Examples
Presenting research findings and arguments with clarity	Poster sessions, research symposiums
Engaging in academic discourse and debates	Four corners debate, fishbowl discussion
Utilizing visual aids and digital media to communicate	PowerPoint presentations, infographics
Collaborative communication and teamwork	Group projects, collaborative research

LEARN MORE

American Historical Association

Offers resources for teaching history, including lesson plans, teaching guides and professional development opportunities.

Digital Inquiry Group

Focuses on preparing young people to be more discerning consumers of the information they encounter online. Provides history lessons and guidance on lateral reading.

EconEdLink

Features a range of economics and personal finance resources, including lesson plans, videos and interactive tools.

GeoInquiries by Esri

Provides collections of short, standards-based inquiry activities for teaching map-based content found in commonly used textbooks in history, geography, Earth science and environmental science.

iCivics

Founded by Justice Sandra Day O'Connor, this nonprofit organization offers free educational video games and lesson plans to promote civics education and encourage students to become active citizens.

National Council for the Social Studies

Provides a hub for social science educators, with access to teaching materials, standards and advocacy tools.

Oregon Open Learning

Offers a variety of resources for Oregon educators with alignment to state standards.

Oregon Social Science Newsletter

Updates from the Oregon Department of Education, including educator- and student-facing resources, opportunities for professional learning, student contests and book reviews.

6

Disciplinary Literacy in

Career and Technical Education (CTE)

By embedding academic knowledge into hands-on, real-world applications, career and technical education (CTE) fosters deeper learning, enabling students to tackle authentic challenges and see the relevance of their education in solving real-world problems. This approach not only enhances engagement but also helps students develop critical skills such as collaboration, communication and innovation.

Disciplinary literacy in CTE—that is, equipping students with the specialized language, thinking processes and problem-solving skills characteristic of their chosen careers—is the foundation for its success. Career-specific literacy empowers students to build their careers, become innovators in their chosen fields and contribute as skilled professionals to society,

For students from backgrounds that have historically faced barriers to entering high-wage professions, CTE provides vital support in closing gaps in information and opportunity. By offering career exploration, mentorship and industry-aligned learning experiences, CTE equips low-income and first-generation college students with the competencies needed to build and strengthen "career capital." Career capital includes technical expertise, workplace readiness and professional networks, which are essential for students to navigate and excel in their fields. By building career capital, CTE advances equity and access to economic mobility.

In Oregon, CTE is organized into career areas[208] that offer multiple opportunities to make connections between career pathways and disciplinary literacy.

For a full set of literacy resources, consider earlier sections of the framework:

- Section 1 offers framing about the why and how of disciplinary literacy, as well as additional examples of disciplinary literacy in CTE.
- Section 2 provides concrete suggestions for developing a sense of belonging and engagement.
- Section 3 provides general guidance for supporting multilingual learners and students experiencing disability.
- Sections 4 and 5 provide detailed ideas relevant across disciplines for supporting students' reading and writing development.

Disciplinary Literacy Practices in the Workplace

Disciplinary literacy in CTE focuses on texts, including career manuals, operating procedures, reports, policies, contracts, laws and project plans, that describe processes, relay procedures, summarize research or outline regulations.

Writing in CTE fields often involves the creation of reports, articles, marketing material and communication plans as well as the careful documentation of tasks or the detailed outline of communication and project plans. All of these require clarity, precision and adherence to industry and professional standards.

At the heart of CTE-specific disciplinary literacy is its emphasis on the application of knowledge to real-world tasks and the conventions of communication within many professions, including those requiring technical proficiency. Through literacy, adolescents become adept at the many types of skills in their career field, from creating business plans to pitching marketing campaigns or communicating empathy with clients. Skills may include learning to read and accurately interpret technical specifications, architectural plans and project briefs associated with various careers. Students may also learn to navigate industry-specific software, read and produce diagrams, and use symbols and technical terminology with accuracy.

CTE-specific disciplinary literacy equips students to critically evaluate workplace problems, collaborate with colleagues and convey complex information in ways accessible to a wide variety of audiences. Through proficiency with this form of literacy, students gain the ability not just to perform tasks, but to think like professionals in their field, anticipate industry trends and adapt to evolving technologies.

HABITS OF MIND OF PROFESSIONALS

This list is from the national career-readiness framework, created with industry input.

- Think critically to make sense of problems and persevere in solving them.
- Collaborate productively while using cultural and global competencies.
- Use digital technologies to enhance productivity.
- Remain resilient to a changing workplace.
- Manage time and space effectively.
- Demonstrate creativity and innovation.
- Act as a good steward of organization finances and resources.
- Attend to physical and mental well-being.
- Consider environmental and social impact of decisions.

Accessing CTE Texts

Understanding the multifaceted nature of texts in CTE is critical for students to effectively engage with the specialized content of their chosen fields. By addressing the complexity of texts and providing strategies to navigate these challenges, educators can enhance students' literacy skills, preparing them for success in their future careers. (Table 6CTE.1 describes key text features and how to teach them.)

Table 6CTE.1. Strategies for Teaching Key Features of Professional Texts

THE WHAT — Key Features of Technical Texts	**THE HOW** — Teaching Strategies for Reading Technical Texts
Quantitative aspects of text complexity • Each career area has its own lexicon, including specialized terms and acronyms that require careful instruction and context for proficiency. • For instance, reading digital design layouts, medical charts or engineering diagrams involves understanding both technical language and visual information that demands interpretive skills. • Technical drawings and schematics, such as circuit diagrams or blueprints, add a layer of visual complexity that demands interpretive skills.	• Integrate vocabulary-building activities that focus on the practical application of specialized terms and acronyms used in a given field, such as medical terminology for nursing or software commands for digital design. • Incorporate visual aids such as labeled diagrams, flowcharts or interactive simulations to help students build proficiency in interpreting complex visual representations, whether they be 3D models in engineering or anatomical diagrams in health sciences. • Use real-life examples and guided practice to break down instructional and procedural texts, making complex processes more manageable and understandable.
Qualitative aspects of text complexity • Professional texts such as accounting standards, marketing reports, visual art critiques, fire safety regulations, agricultural guidelines and forestry management plans are dense with exact specifications, technical jargon and regulatory language that dictate professional practice. • The complexity of business, legal and scientific texts often lies in their formal language and the critical role they play in outlining agreements, compliance and ethical standards.	• Provide annotated examples of technical manuals and building codes, highlighting key information and demonstrating strategies for navigating dense industry-specific texts. • Engage students in role-play or case study analysis to explore the implications of professional and legal documents, fostering a deeper understanding of formal language and content.
Contextual aspects of text complexity • Understanding professional texts requires an awareness of the cultural, ethical and historical evolution of the industry practices they describe. • Keeping up with evolving technologies, methodologies and trends is crucial across fields such as marketing, visual arts, agriculture and fire science, as texts must be current to be applicable.	• Introduce historical case studies or industry narratives—such as the evolution of wildfire management techniques and technology over the decades—to provide students with the cultural and social context for the technical content they are studying. • Foster critical thinking by discussing authorial intent and potential industry biases, encouraging students to question and evaluate the credibility of technical texts.

THE WHAT — Key Features of Technical Texts	**THE HOW** — Teaching Strategies for Reading Technical Texts
Reader and task considerations • One consideration is students' technical background and experiences. The effectiveness of career-related reading tasks often depends on students' prior knowledge and hands-on experiences with the discipline. For example, understanding design principles, medical protocols or engineering processes can significantly influence how students approach text in their field. • Another consideration is the purpose of technical reading assignments. Reading in CTE contexts serves diverse purposes, from understanding theoretical concepts to executing practical tasks, each with its own set of challenges.	• Assess students' prior knowledge and experiences to tailor reading assignments that build on existing competencies such as understanding basic anatomy for nursing or familiarity with growth patterns for forestry-related text. • Clearly define the objectives of reading assignments, whether they aim to inform about theoretical concepts, instruct on procedural standards or enable practical application, and provide targeted support accordingly. • Design activities that simulate real-world tasks such as developing a marketing plan or drafting a project proposal. This challenges students to apply their reading comprehension.

Reading Like a Career Professional

CTE professionals across various fields use a variety of reading strategies to engage with the technical and professional materials pertinent to their fields. In effective classrooms, educators prepare students to proficiently read and understand technical materials by explicitly teaching the why, when and how of professionals' reading strategies to students. This also equips students to apply these approaches as they perform precise, safe and effective work within their chosen career area. (See Section 4 and Table 6CTE.2 for general reading strategies. Also see Table 6CTE.3 for discipline-specific reading strategies.)

Table 6CTE.2. General Reading Strategies Used by Career Professionals

THE WHAT — General Reading Strategy	**THE HOW** — Examples of What Professionals Do
Synthesizing information • Professionals in fields such as nursing, engineering, accounting, agriculture or multimedia must synthesize information from various sources, including texts, charts, databases and multimedia. • This is crucial for forming a comprehensive understanding of a topic and making informed decisions.	• **Nursing:** Synthesizes patient histories, diagnostic reports and clinical guidelines to create effective care plans. • **Engineering:** Combines information from technical manuals, safety regulations and scientific research to design or improve systems. • **Marketing:** Integrates data from market research reports, social media analytics and consumer behavior studies to develop strategic marketing plans.
Critical thinking and analysis • Critical thinking is essential across career areas as students evaluate the credibility of sources, the quality of data and the logic of procedures, paralleling the analytical skills required in disciplines like science and social science. • Professionals analyze the purpose and effectiveness of technical texts, assessing their relevance and application to real-world technical scenarios.	• **Accounting:** Analyzes financial statements and audit reports to ensure accuracy and compliance with regulations. • **Visual arts:** Critiques art reviews, exhibition proposals and historical context to understand and produce meaningful art. • **Forestry:** Evaluates environmental impact assessments and forestry management plans to make sustainable decisions.
Reading for main ideas and details • Professionals in all fields must discern the main ideas in complex texts and identify supporting details, a skill shared with reading in humanities and science texts. • Professionals focus on extracting critical information from complex texts that are often densely packed with instructions, specifications or data.	• **Fire science:** Identifies key safety protocols and emergency response strategies in firefighting manuals. • **Digital design:** Focuses on guidelines and style requirements in design briefs or client proposals. • **Agriculture:** Extracts essential information on soil health, crop management or pest control from agricultural research papers.

Table 6CTE.3. Discipline-Specific Reading Strategies Used by Career Professionals

DISCIPLINE-SPECIFIC READING STRATEGY	**THE WHAT** — Examples of What Professionals Do
Sequential processing and execution • Professionals across fields develop the skill to sequentially process procedural texts, which outline step-by-step instructions for tasks such as surgical procedures in nursing, coding algorithms in computer science or marketing campaign rollouts.	• **Fire science:** Reads and interprets standard operating procedures (SOPs) to coordinate emergency responses safely and efficiently. • **Engineering:** Follows detailed procedures for equipment calibration, testing or assembly. • **Visual arts:** Follows sequential steps for art restoration or digital editing processes.
Interpreting procedural nuances • Students in various careers learn to identify and interpret procedural nuances and conditional steps within technical documents—a strategy particularly important when procedures vary based on different scenarios or outcomes.	• **Nursing:** Understands varying protocols for patient care based on age, condition or comorbidities. • **Accounting**: Interprets nuances in tax laws that apply differently to businesses and individuals. • **Agriculture:** Recognizes conditional steps in pest management or irrigation scheduling based on weather patterns or soil conditions.
Analyzing technical data and reports • Professionals in fields like accounting, fire science, forestry and marketing analyze technical data and reports. • This involves extracting relevant information from dense data sets, interpreting findings and understanding implications in contexts such as quality control, environmental conservation or strategic planning.	• **Marketing:** Analyzes data reports to understand customer segmentation, campaign performance and market trends. • **Forestry:** Interprets data from ecological surveys to develop sustainable forest management practices. • **Fire science:** Analyzes post-incident reports and data to identify patterns and improve firefighting strategies.

For greatest impact on students, use explicit teaching processes to engage students in what career professionals do when reading complex texts. In addition, support students' understanding with regular opportunities to annotate, discuss and write about complex, career-specific texts. (For details about how to teach, see Section 4, Explicit Instruction for Teaching Reading Strategies and Guidance for Practice: Teaching Students to Read Like a Career Professional.)

GUIDANCE FOR PRACTICE

Teaching Students to Read Like a Career Professional

- **Talk to the text:**[209] Encourage students to "talk to the text," directly annotating technical documents with their thoughts, questions and connections to actively engage with and understand the material.
- **Model the reading process:** Demonstrate the interpretation of technical texts by reading aloud and explaining the processing of complex instructions and diagrams, helping students understand the technician's approach to comprehension.
- **Use authentic materials:** Engage students with actual technical documents relevant to their field, such as repair manuals or assembly instructions, to practice real-world reading scenarios.
- **Hands-on application:** Reinforce reading comprehension by having students perform tasks described in procedural texts, linking theoretical knowledge with practical skills.
- **Reflective practice:** After completing a technical reading task, have students reflect on their reading process, discussing what strategies were effective, what challenges they encountered and how they overcame them. This reflection helps students refine their approach to reading technical texts.

Writing Like a Career Professional

Writers in every career area must convey complex information clearly and concisely and adhere to industry standards. They also anticipate the needs of their audience, which often comprises other professionals who require precise and actionable information. This type of writing serves to instruct and document critical processes, meaning that clarity, precision and accuracy are paramount.

By teaching students to use the same approaches to writing that professionals use, educators can empower students to become effective communicators in their chosen field, capable of producing professional-quality documents that meet the rigorous demands of the workplace. (See Table 6CTE.4 for a list of writing approaches.)

Table 6CTE.4. Key Writing Approaches in the Workplace

KEY APPROACH	**THE WHAT** — What Career Professionals Do
Adherence to conventional structures	◉ Adhere to industry-specific documentation formats such as standard operating procedures (SOPs), technical manuals and troubleshooting guides, which provide a consistent framework for organizing and presenting information.

KEY APPROACH	**THE WHAT** — What Career Professionals Do
Precision in language	◉ Write using precise and unambiguous language to describe processes, specifications and guidelines, avoiding any potential for misunderstanding in instructions, diagnostic reports or marketing plans.
Audience awareness	◉ Write with a clear understanding of their audience's knowledge level, cultural identity and needs, often tailoring content to ensure that it is accessible to their particular audience and its level of expertise.
Use of visuals	◉ Incorporate visuals such as diagrams, flowcharts and screenshots, which writers must skillfully integrate into the text to support and enhance the written content. ◉ Often need to be adept at visual communication, social media and creation of clear infographics or videos.
Revisions	◉ Treat writing as a living document that requires updates and revisions. They must keep accurate records of changes, ensuring that documents remain current and reliable. ◉ Collaborative production is common in most careers.

To teach students to use specific professional approaches to writing, effective classrooms emphasize explicit teaching of both general and discipline-specific writing strategies as well as engagement in extensive discussion and collaboration. Providing students with opportunities to work with their peers and with business and industry partners to develop communications is impactful; it mirrors how writing takes place in most workplaces.

(See Section 5 for detailed recommendations. Find selected highlights of teaching practices in Guidance for Practice: Teaching Students to Write Like Writers in Their Career Area.)

GUIDANCE FOR PRACTICE

Teaching Students to Write Like Writers in Their Career Area

- **Provide templates and examples:** Use industry-standard templates and real-life examples to familiarize students with the structure and format of professional documents they will encounter in their career area.
- **Emphasize clarity and precision:** Teach students to choose their words carefully, stressing the importance of clarity and precision in professional writing to avoid misinterpretation or errors in application.
- **Integrate visuals:** Train students in the creation and integration of visuals into their documents, showing them how to use visual aids to complement and clarify the written content.
- **Audience analysis exercises:** Engage students in exercises where they identify and analyze their target audience, practicing how to adjust their writing style and content accordingly. (See Section 5, Opportunities to Consider the Purposes and Audiences for Writing.)
- **Writing and review workshops:** Conduct workshops that simulate the revision process of technical documents, teaching students how to track changes, update information and maintain version control. These workshops could include collaboration with business and industry partners.

Communicating Like a Career Professional

Many of the communication approaches described in science, math and social science apply to careers and could be taught by a CTE educator. To increase the relevance of literacy learning in these fields, educators can provide information about potential careers that use these types of communication—for example, structural engineers using mathematics-specific language or reporters using the language of social scientists to explain survey results. This approach builds connections across disciplines and increases adolescents' exposure to the many opportunities that await them after school.

CTE students must be adept at conveying information succinctly and effectively, whether through electronic communication, verbally during a team meeting, or even nonverbally while collaborating on a project. Such communication often requires the ability to translate complex concepts into accessible language that can be understood by diverse audiences, including clients, colleagues and interest holders.

Effective communication also involves active listening, giving and receiving feedback constructively, and adapting to various communication platforms. The mode can range from face-to-face interactions to use of virtual collaboration tools. It is about creating a dialogue that facilitates problem-solving, promotes safety and drives project success. All professionals must balance the preciseness of their specialized knowledge with the interpersonal savvy needed to work within a team and serve clients or end users.

CTE students are also expected to develop proficiency with digital communication tools, which may include project management software, messaging platforms, use of generative AI and specialized industry-related applications. Digital literacy is essential for staying connected with team members, managing projects and keeping up with the fast-paced evolution of their professional fields. (See Table 6CTE.5 for a list of ideas for teaching students to communicate like career professionals.)

Table 6CTE.5. Classroom Structures for Teaching Students to Communicate Like Career Professionals

THE WHAT — Communicating Like a Career Professional	**THE HOW** — Examples
Active listening and feedback	Participating in a team debrief after a project, where each member discusses what went well and what could be improved.
Verbal explanation of concepts	Explaining a complex medical procedure to a client in layperson's terms.
Nonverbal communication[210]	Using hand signals to coordinate actions safely when verbal communication is not possible in a noisy workshop environment.
Adaptation to communication platforms	Conducting a virtual meeting using videoconferencing software to collaborate with remote team members.
Digital literacy in communication tools	Utilizing project management software to update the team on task progress and document project changes.

LEARN MORE

Association for Career and Technical Education (ACTE)

Offers a range of resources for CTE educators, including professional development opportunities, policy research and instructional materials.

Capitalizing on Context: Curriculum Integration in Career and Technical Education

Guide to integrating math, science and literacy within CTE programs.

Oklahoma Department of Career and Technology Education, CareerTech)

Provides comprehensive CTE resources, including lesson plans, industry-specific training, and teaching tools.

Digital Promise: Global Competence in CTE

Provides project-based learning examples within the different career areas that develop global competencies and communication skills.

Edutopia, Career &Technical Education

Features articles, videos and other resources on innovative practices in education, including the integration of CTE in schools.

LiteracyTA

Offers tools and support for educators to develop students' literacy skills, with strategies that can be applied across various disciplines, including CTE.

CommonLit

Offers a free digital library of texts, including informational texts that can be relevant for CTE. While it serves a broad educational audience, CTE educators can find complex texts here that are suitable for cross-disciplinary literacy instruction.

ReadWorks

Provides a vast collection of reading passages and literacy resources. It includes a variety of complex informational texts that can be incorporated into CTE curriculum.

6

Disciplinary Literacy in

Health and Physical Education

In today's rapidly changing health landscape, where misinformation often spreads more quickly than legitimate information, the need for disciplinary literacy in health and physical education has never been more critical.

Disciplinary literacy in health and physical education equips students with the analytical tools to navigate complex health information as well as engage knowledgeably in physical activities and communicate confidently about why and how physical activity contributes to health and well-being. Developing these literacy skills enables students to become informed and critical thinkers in health-related topics, participate fully in their own health and wellness decisions, and advocate for health and wellness in their communities.

For a full set of literacy resources, consider earlier sections of the framework:

- Section 1 offers framing about the why and how of disciplinary literacy, as well as additional examples of disciplinary literacy.
- Section 2 provides concrete suggestions for developing a sense of belonging and engagement.
- Section 3 provides general guidance for supporting multilingual learners and students experiencing disability.
- Sections 4 and 5 provide detailed ideas relevant across disciplines for supporting students' reading and writing development.

Literacy in Health and Physical Education

Literacy in health and physical education enables individuals to navigate the health and wellness landscape with knowledge and confidence. Literacy skills in these areas contribute to creating a health-literate society. Students are prepared to critically evaluate the world of health information and to communicate about and through physical activities with competence and ease.

In health education, students must be able to read, interpret and evaluate information, ranging from scientific research and public health announcements to nutrition labels and fitness technology data.

Disciplinary literacy in health education not only means comprehending medical terms and concepts but also promotes critical thinking and informed decision-making. Students analyze the purpose and context of health messages, assess the validity of health-related claims, and apply this information to influence their behaviors and attitudes toward health.

HABITS OF MIND OF HEALTH AND PHYSICAL EDUCATION PROFESSIONALS

- Health-consciousness.
- Empathy and sensitivity.
- Motivation and encouragement.
- Safety awareness.
- Lifelong learning.

In physical education, disciplinary literacy involves understanding the strategies, techniques and conventions of various sports and activities, as well as being able to articulate and reflect upon one's own physical experiences and performance.

Disciplinary literacy in physical education emphasizes the ability to interpret and apply movement concepts, communicate effectively in team settings, and understand the cultural and societal significance of sports and physical activities. It cultivates students' appreciation for the role of physical activity in personal and societal well-being and for developing the motivation to participate in physical endeavors throughout life.

Accessing Health and Physical Education Texts

In health and physical education, the complexity of texts students encounter varies widely, encompassing a range of genres and forms from scientific studies and health guidelines to instructions for physical activities and discussions of personal well-being. Proficiency in reading these texts enables students to engage with content that will inform their health choices and physical activities throughout their lives.

For the greatest impact, health and physical education educators demystify the content and structure of texts and make the texts more accessible to learners at different levels by explicitly teaching strategies that help students access complex texts. (Table 6HPE.1 describes key text features and how to teach them.)

Table 6HPE.1. Strategies for Teaching Key Features of Health and Physical Education Texts

THE WHAT — Key Feature of Health and Physical Education Texts	**THE HOW** — Teaching Strategies to Read Health and Physical Education Texts
Specialized vocabulary and terminology	Incorporate contextualized vocabulary instruction that focuses on the meaning and usage of domain-specific terms. Encourage students to create glossaries or word maps.
Integration of scientific concepts and data	Use graphic organizers to help students identify and understand key concepts and their relationships. Teach students to interpret data presented in tables, charts and graphs.
Descriptive and procedural text structures	Teach students to recognize and follow sequences in procedural texts. Use role-play and practical demonstrations to bring descriptions to life.
Multimodal information (e.g., diagrams, photos)	Provide instruction on reading and interpreting visual information. Engage students in discussions about how images complement and enhance the text.
Varied audiences and purposes	Explore different text types and discuss the intended audience and purpose. Use authentic texts that reflect real-world applications of health and physical education knowledge.
Ethical and cultural considerations	Facilitate discussions on the cultural and ethical dimensions of health and physical education topics. Encourage students to reflect on diverse perspectives and values.

Reading Like a Health and Physical Education Professional

Professionals in the fields of health and physical education must be proficient in a suite of reading strategies that cater to the cross-disciplinary nature of these content areas. By explicitly teaching such strategies, educators enable students to traverse the landscape of complex material, from scientific research and health policies to fitness program outlines and nutritional guides.

Teaching strategies such as active reading, critical analysis and the practical application of knowledge helps all students gain disciplinary literacy. Moreover, teaching discipline-specific strategies helps prepare students who choose health and physical education careers to address the multifaceted challenges of their fields and to contribute meaningfully to the health and well-being of individuals and communities. (See Section 4 and Table 6HPE.2 for general reading strategies and Table 6HPE.3 for discipline-specific reading strategies.)

Table 6HPE.2. General Reading Strategies Used in Health and Physical Education

GENERAL READING STRATEGY	**THE WHAT** — What Health and Physical Education Professionals Do
Activating prior knowledge	◉ Health and physical education professionals draw upon their extensive background knowledge and experience when approaching new texts. ◉ This practice allows them to contextualize new information within their existing framework, enhancing comprehension and integration of new concepts.
Skimming and scanning	◉ Professionals often skim texts to capture the essence of the content quickly or scan for specific information relevant to their needs. ◉ These efficient reading techniques are indispensable for managing the vast array of information encountered in daily practice.
Reading for detail	◉ Professionals pay close attention to the specific details within texts to ensure precise understanding, especially when interpreting technical documents, protocols or guidelines. ◉ Professionals' meticulous approach to reading is essential for accuracy and adherence to best practices in their fields.

Table 6HPE.3. Discipline-Specific Reading Strategies in Health and Physical Education

DISCIPLINE-SPECIFIC READING STRATEGY	**THE WHAT** — What Health and Physical Education Professionals Do
Analyzing and evaluating health information	◉ In their pursuit of evidence-based practice, professionals critically analyze health information to determine the credibility and reliability of sources. ◉ Professionals rigorously evaluate the validity and relevance of health data and research findings, understanding that this scrutiny is essential to informed decision-making.

DISCIPLINE-SPECIFIC READING STRATEGY	**THE WHAT** — What Health and Physical Education Professionals Do
Examining visual aids and multimedia resources	◉ Professionals in health and physical education fields are well versed in analyzing diagrams, charts, illustrations and multimedia resources that supplement and clarify written information. ◉ Professionals effectively synthesize visual and textual information to enhance their understanding and to inform their professional endeavors.
Navigating texts on ethical and cultural health issues	◉ Professionals approach texts concerning ethical and cultural issues in health and physical education with discernment and cultural competence, recognizing the importance of diverse perspectives. ◉ Professionals read with an appreciation for the complexity of ethical considerations and cultural practices in health, which informs their work and interactions with clients and communities.

For greatest impact on students, use explicit teaching processes to engage students in what health and physical education professionals do when reading complex texts. (For details about how to teach, see Section 4, Explicit Instruction for Teaching Reading Strategies as well as Guidance for Practice: Teaching Students to Read Like Health and Physical Education Professionals.)

GUIDANCE FOR PRACTICE

Teaching Students to Read Like Health and Physical Education Professionals

- **Demonstrate annotations:** Demonstrate how to annotate scientific texts related to health and physical education by underlining key terms, writing questions in the margins and summarizing sections. Encourage students to make predictions based on headings and visuals before reading and then confirm or adjust their predictions as they go.
- **Integrate professional text analysis techniques:** Instruct students in the use of professional techniques such as skimming for main ideas, scanning for specific details, and annotating texts with insights and questions. These techniques are routinely employed by health and physical education (PE) professionals to efficiently navigate through extensive and complex materials.
- **Apply real-world problem-solving to reading:** Present students with real-world scenarios and problem-based learning tasks that require them to read and interpret health/PE texts in a manner consistent with professional practice. This could include case studies, policy analysis or the development of health programs based on current literature.

- **Promote reflective reading practices:** Foster a reflective reading habit where students consider how the information they read applies to practical health/PE settings. Encourage them to reflect on how they would use the knowledge gained from texts in their future professional roles, including ethical considerations and cultural competence.

Writing Like a Health and Physical Education Professional

Writing in health and physical education involves communicating information and arguments clearly and persuasively about health, wellness and physical activity. It requires the ability to synthesize information from various sources and present it in a format that is accessible to diverse audiences. By being proficient in these writing strategies, health and physical education professionals enhance the clarity and impact of their communication, contributing to the advancement of knowledge and practice in their fields. (Table 6HPE.4 highlights key writing approaches in health and physical education.)

Table 6HPE.4. Key Writing Approaches in Health and Physical Education

KEY APPROACH	**THE WHAT** — What Health and Physical Education Professionals Do
Using clear and concise language	Professionals prioritize clarity to ensure that their written communication is easily understood by all readers, whether they are writing academic papers, patient instructions or policy documents.
Incorporating evidence and citing sources	Professional writing in health and physical education is often evidence-based, requiring the integration of current research, proper citation of sources and a grounding in credible scientific findings to substantiate claims.
Adapting content for various audiences	Depending on the audience—be it peers, clients or the general public—professionals skillfully adjust the complexity of their language, the depth of explanation and the type of supporting materials included.
Employing visual and multimedia elements	The strategic use of diagrams, images and other visual aids is common in health and physical education writing to illustrate points, demonstrate techniques or present data in a more digestible format.

To teach students to use specific professional approaches to writing, effective classrooms emphasize explicit teaching of both general and discipline-specific writing strategies and engagement in extensive discussion and collaboration. Creating opportunities for student collaboration in writing mirrors the collaborative and team-oriented nature of health and physical education careers.

(See Section 5 for detailed recommendations. Find selected highlights of teaching practices in Guidance for Practice: Teaching Students to Write Like Health and Physical Education Professionals.)

GUIDANCE FOR PRACTICE

Teaching Students to Write Like Health and Physical Education Professionals

- **Foster precision and clarity in communication:** Encourage students to use specific and clear language that accurately conveys health and physical education concepts. Emphasize the importance of being concise and direct to avoid misunderstandings, especially when providing instructions or health guidelines.
- **Cultivate evidence-based writing skills:** Teach students to support their claims with research and data, citing credible sources appropriately. Guide them in constructing well-reasoned arguments that are grounded in evidence, reflecting the standards of professional health and physical education writing.
- **Incorporate visual data literacy:** Develop students' abilities to include and interpret visual data such as graphs, charts and diagrams in their writing. This skill is essential for professionals who must often communicate complex information visually as well as textually.
- **Encourage ethical and culturally sensitive writing:** Train students to write with an awareness of ethical considerations and cultural diversity. This includes respecting confidentiality, accurately representing research populations, and being inclusive in language to ensure that writing is relevant and respectful to all audiences.

Communicating Like a Health and Physical Education Professional

Effective communication in health and physical education is multifaceted, encompassing verbal, written and demonstrative methods to convey health and wellness concepts. This involves not only the dissemination of information but also active listening, empathy and motivational skills to foster positive health behaviors in others. Professionals must tailor their communication strategies to suit diverse contexts and audiences, ensuring that their message is not just heard, but understood and acted upon. (See Table 6HPE.5 for teaching ideas.)

Table 6HPE.5. Classroom Structures for Teaching Students to Communicate Like Health and Physical Education Professionals

THE WHAT — Communicating Like Health and Physical Education Professionals	**THE HOW** — Possible Examples
Active listening and empathy	A health educator listens attentively to a student's health concerns, demonstrating understanding and offering supportive feedback.
Clear oral and nonverbal communication	A physical education educator provides clear instructions for a new skill while using gestures to emphasize body movements.
Digital engagement and feedback	A dietitian uses an online platform to share nutritional tips and to provide personalized feedback to clients.
Educational storytelling and advocacy	A health educator facilitates a peer-led activity to research substance use data and create a digital campaign. The educator provides personalized feedback to students and provides opportunities to provide feedback to one another.

LEARN MORE

SHAPE America, Society of Health and Physical Educators

SHAPE America provides a variety of resources, including position statements, standards-based guidelines and teaching tools that promote health and physical literacy. Its resources help educators integrate literacy into PE and health education by offering sample lesson plans, assessment examples and professional development opportunities.

Centers for Disease Control and Prevention (CDC), Healthy Schools

The CDC's Healthy Schools section offers comprehensive materials on school health guidelines, data and research. Educators can access resources like the Health Education Curriculum Analysis Tool (HECAT) to develop lessons that align with health literacy standards.

KidsHealth in the Classroom

KidsHealth in the Classroom offers free health-related lesson plans for educators. It covers a wide range of topics, including nutrition, physical fitness and emotional wellness, with materials specifically designed to promote literacy and critical thinking in health topics.

PE Central

PE Central provides lesson plans, assessment ideas and teaching tips for physical education educators. Resources are available to help students understand the importance of physical activity and to teach them how to analyze and interpret health and fitness information.

American Heart Association, Teaching Gardens Program

The American Heart Association's Teaching Gardens Program provides a real-world context for learning about nutrition and healthy living. The program offers a variety of resources that can be used to teach students how to read and understand health information and apply it to their lives.

Action for Healthy Kids

Action for Healthy Kids focuses on building healthier school communities. It offers toolkits, webinars and resources that help educators teach students about the components of a healthy lifestyle and develop the literacy skills necessary to navigate health information.

Move to Learn

Move to Learn integrates physical activity with academic learning. It provides videos and resources that encourage movement while reinforcing literacy skills, such as following multistep instructions and understanding health-related concepts.

American School Health Association

American School Health Association is a community of experts united by a singular mission: to empower kids to thrive in healthy, supportive school environments. The site provides professional learning opportunities and school resources.

OPEN Physical Education Curriculum

OPEN provides curriculum resources free to every school to provide equity of access to the entire physical education community. In addition to curriculum resources, the site offers access to free professional learning modules.

Oregon Open Learning Hub

Oregon Open Learning Hub contains over 1,000 resources that have been authored or curated by Oregon educators. The collection Sex Ed Open Learning (SEOL) Project strives to advance standards-based health and sexuality education.

2023 Oregon Health Standards and Oregon Physical Education Standards

K-12 Oregon Health Education Standards.

Oregon Department of Education, LGBTQ2SIA+ Resources

This web page seeks to clarify the legal requirements and LGBTQ2SIA+ student rights related to safe and inclusive environments and provides access to resources.

Appendix A

Acknowledgments

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Oregon's Adolescent Literacy Framework builds on this foundation, bringing into focus the significance of disciplinary literacy in preparing adolescents for their postsecondary futures and the urgency of responding to secondary students who are still developing grade-level literacy skills.

Appendix B

Supporting Career-Connected Learning by Applying Literacy Skills

This appendix lists evidence-based approaches for integrating career-connected learning with disciplinary literacy. Teachers of all disciplines can consider how to integrate these broad strategies with their content. Discipline-specific examples appear in Sections 1, 2 and 6 of this framework.

- **Project-based learning (PBL):** Engage students in literacy projects that mirror real-world tasks, such as writing business plans, conducting interviews or creating technical manuals, to simulate workplace scenarios.
- **Career-focused texts:** Introduce authentic reading materials like manuals, case studies and professional documents from various fields to build familiarity with workplace literacy demands.
- **Interdisciplinary literacy activities:** Design assignments that combine disciplines, such as writing a scientific report or analyzing historical data, to reflect the integrated skills required in careers.
- **Digital literacy tools:** Incorporate technologies like presentation software, collaborative writing platforms and data visualization tools to prepare students for workplace communication.
- **Role-playing and simulations:** Use classroom activities where students act as professionals (e.g., journalists, scientists or entrepreneurs), requiring them to research, write and present in career-relevant ways.
- **Explicit teaching of transferable skills:** Focus on critical thinking, audience analysis and effective communication, showing students how these skills apply across disciplines and career paths.
- **Career exploration in literacy assignments:** Incorporate tasks like career research reports, creating resumes or portfolios, and analyzing job descriptions to make literacy learning relevant to future goals.
- **Collaborations with CTE programs:** Partner with CTE initiatives to integrate career-connected content into literacy instruction.
- **Family and community partnerships:** Engage families and community members in literacy projects that reflect workplace tasks, emphasizing connections between home, school and career aspirations.
- **Mentorship and guest speakers:** Invite professionals to share how they use literacy skills in their careers, offering students practical insights and motivation.

Appendix C

Oral Reading Fluency Rates

GRADE	PERCENTILE	FALL WORDS COUNTED PER MINUTE (WCPM)	WINTER WCPM	SPRING WCPM
1	90		97	116
	75		59	91
	50		29	60
	25		16	34
	10		9	18
2	90	111	131	148
	75	84	109	124
	50	50	84	100
	25	36	59	72
	10	23	35	43
3	90	134	161	166
	75	104	137	139
	50	83	97	112
	25	59	79	91
	10	40	62	63
4	90	153	168	184
	75	125	143	160
	50	94	120	133
	25	75	95	105
	10	60	71	83
5	90	179	183	195
	75	153	160	169
	50	121	133	146
	25	87	109	119
	10	64	84	102
6	90	185	195	204
	75	159	166	173
	50	132	145	146
	25	112	116	122
	10	89	91	91

Appendix D

Models of Writing That Support Adolescent Literacy Development

> **"The implication for writing instruction of this 'everything and the kitchen sink' call from theorists is that rather than focusing on isolated or discrete activities, instructional approaches must take on writing as complex activity."**
>
> **– Smith[211]**

Writing is a complex, multidimensional activity that is embedded in cognitive, social and material practices. To develop literacy skills among middle and high school students, it is crucial for educators to recognize and integrate theories of writing into classroom practices. Over the years, several models of writing have guided instruction in schools. These models are summarized below as four theoretical approaches.[212] They have practical implications as educators design writing tasks and instruction to foster adolescents' agency, independence and voice.

Each of the four supports a multidimensional and complex approach to writing instruction. They are best woven together into a comprehensive approach—one that respects writing's inherent complexities as well as its role in human communication and expression.

Products Approach

The **products approach** to writing focuses on tangible outputs such as essays and reports. Historically, the focus on products began with the evaluation of written work, like the entrance exams at Harvard in the 1870s. Over time, theorists have analyzed how these products reflect various developmental stages in writing, with attention to grammar and syntax as markers of sophistication. Because this approach focuses on writing in its simplest form, care must be taken to ensure that the products students are asked to create represent authentic acts of reading and writing outside of school as well as school-focused exercises.

In a **products approach** classroom, students might write drafts of essays or research papers and then engage in peer-review sessions where they provide constructive feedback on one another's written products. The goal is to improve the quality of written products through collaborative review and teach the standards and criteria for effective writing.

Process Approach

The **process approach** to writing emerged from direct observations of writers at work. When put into practice in classrooms, this approach focuses on activities involved in writing, such as planning, drafting and revising. Early models suggested a linear sequence of these activities, but later theories recognized writing as more recursive and nonlinear, influenced by cognitive and rhetorical processes. The emphasis here moves from a singular focus on product evaluation to considerations of the writer's strategy and cognitive engagement during the act of writing.

In a **process approach** classroom, students participate in a workshop model, where they focus on different stages of the writing process. The goal is to demystify the stages of the writing process and provide students with concrete strategies they can apply to their writing.

Practices Approach

The **practices approach** centers on the sociocultural aspects of writing, exploring how writing functions as a social practice. This approach suggests that writing is not only a linguistic activity but also a social one that reflects and shapes societal norms and values. Classrooms that adopt a practices approach support dialogue, cultural norms and social interactions that shape writing, especially within the disciplines.

In a **practices approach** classroom, students write in various genres and for various purposes, mirroring the genres and purposes they encounter outside of school and those that represent the disciplines they study at school. The goal is to validate the writing practices students bring to the classroom and to give them opportunities to create authentic texts within the content areas.

> **"[Creating a welcoming writing environment] begins by helping students bridge gaps between their perspectives, ideas, and experiences while connecting these aspects of their identity to texts that examine social and political issues that may be at play in their lives."**
>
> **– Winn & Johnson[213]**

Pathways Approach

The **pathways approach,** which is relatively new, focuses on writing as part of dynamic, socio-material systems, emphasizing the mobilities of writing across different media, modalities and contexts. This approach considers how writing travels and transforms across spaces and times, influenced by digital technologies and global interactions. It challenges the notion of writing as confined to static texts, viewing it instead as fluid and evolving across diverse contexts. Classrooms that adopt a pathways approach provide opportunities for students to use various modalities and technologies, highlighting the dynamic nature of modern writing and its applications across various platforms and contexts.

In a **pathways approach** classroom, students create projects that require them to write across different modes and mediums, such as digital storytelling, blogs, podcasts, digital infographics or video presentations that present models they have developed or understand. The goal is to deepen students' understanding of disciplinary content through diverse communication forms, enhancing their critical thinking, problem-solving and communication skills.

GUIDANCE FOR PRACTICE

Considerations for Designing Multidimensional Writing Instruction

The questions below can be used as considerations when designing writing instruction that integrates these four theoretical approaches.

- **Products approach:** What features distinguish different text types (i.e., narrative, informational, argumentative) and forms (e.g., opinion editorials, literary analysis essays, scientific journals, mathematical proofs)? What products reflect authentic purposes and audiences for a particular discipline? How can assignments and criteria for assessing assignments (e.g., rubrics, checklists) build students' understanding of high-quality writing?
- **Process approach:** What strategies support students' flexible and independent use of writing processes for different purposes and audiences?
- **Practices approach:** How can writing tasks invite students to draw on their existing writing practices (including interests, language, culture, forms of communication) to create authentic texts and amplify their voices?
- **Pathways approach:** How can writing tasks engage students in using multiple modalities and deepening their understandings of disciplinary content?

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