New York State
EDUCATION DEPARTMENT
Knowledge › Skill › Opportunity

Science of Reading: The Elementary Years

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The Elementary Years: The Cornerstone Of Literacy Success

Developing strong literacy skills in the elementary years (K-6) is crucial for setting students on a path towards academic and personal success. The bedrock of this phase is explicit, cumulative, knowledge-building instruction that intensifies each year. In addition to promoting literacy, a knowledge-building approach cultivates critical thinking, social-emotional skills and competencies, and identity development. In this phase, students engage in a dual process: they develop automatic and accurate word reading skills ("crack the code") and develop skills, knowledge, and strategies to make meaning from text ("read to learn").

High-Impact Practices: Cultivating the "Big 6" for Lifelong Literacy

Reading, writing, and communication skills develop from early childhood through adolescence. Across these early years, these high-impact practices develop the "Big 6" in literacy-learning environments that are rigorous, authentic and culturally responsive, laying the foundation for lifelong literacy.

Defining Literacy for Today + Tomorrow

The ability to read, write, speak and listen as a means of identification, understanding, interpretation, creation, and communication; the ability to communicate in diverse ways and with diverse audiences; the ability to understand and use print in an increasingly text-mediated, information-rich, digital and fast-changing world.

(See NYSED's Briefs on Advanced Literacies)

High-Impact Instructional Practices

COLLABORATIVE AND CULMINATING PROJECTS, PERFORMANCES, AND CELEBRATIONS
Goal: Application and Integration of Knowledge, Skills, and Competencies; Development of a Product
Promotes: BIG 6 + critical and creative thinking • collaborative planning and problem solving • self-regulation

TEXT-BASED DISCUSSIONS AND WRITING OPPORTUNITIES
Goal: Development and Application of Language, Interpersonal + Communication Skills, and Content Knowledge
Promotes: BIG 6 + critical thinking • knowledge building • perspective-taking • organizing, planning, editing, revising

ENGAGEMENT WITH A VARIETY OF HIGH INTEREST, DIVERSE, AND COMPLEX TEXTS
Goal: Intellectual Inquiry into Big Ideas, Rich Content, High-Utility Vocabulary, and Diversity of Perspectives
Promotes: BIG 6 + textual analysis + interpretation • knowledge building • reasoning + synthesizing

PHONOLOGICAL AWARENESS, PHONICS, SPELLING, AND WORD STUDY SKILL-BUILDING
Goal: Fostering Foundational Literacy and Language Skills Alongside Developing Essential Reading and Writing Proficiency
Promotes: BIG 6 + joyful and purposeful interactions with language • metalinguistic skills • analytical thinking

FOSTERING UNDERSTANDING OF PRINT CONVENTIONS, FEATURES, AND FUNCTIONS

Concepts of Print | **Text Structures, Patterns, and Purposes**

Goal: Understanding the Conventions of Written Language + Navigating and Comprehending Increasingly Complex and Varied Texts
Promotes: BIG 6 + joyful and purposeful interactions with print • information processing • metacognitive skills • analytical thinking
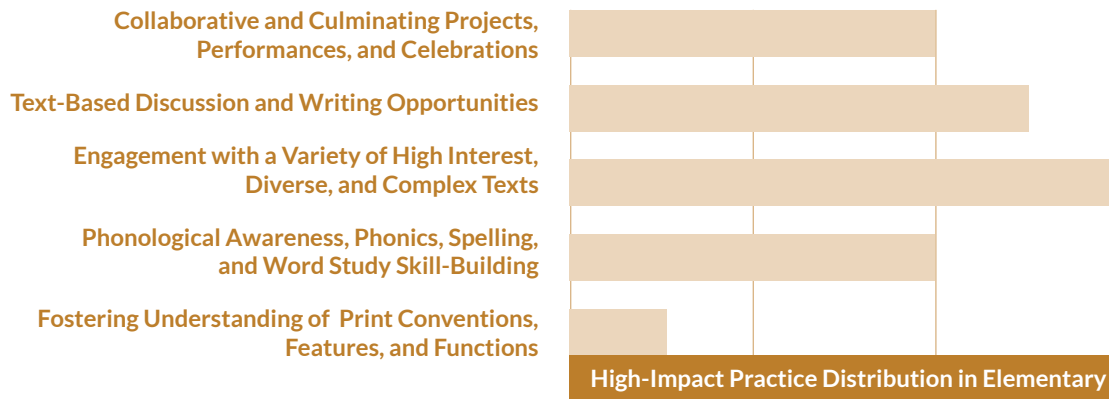
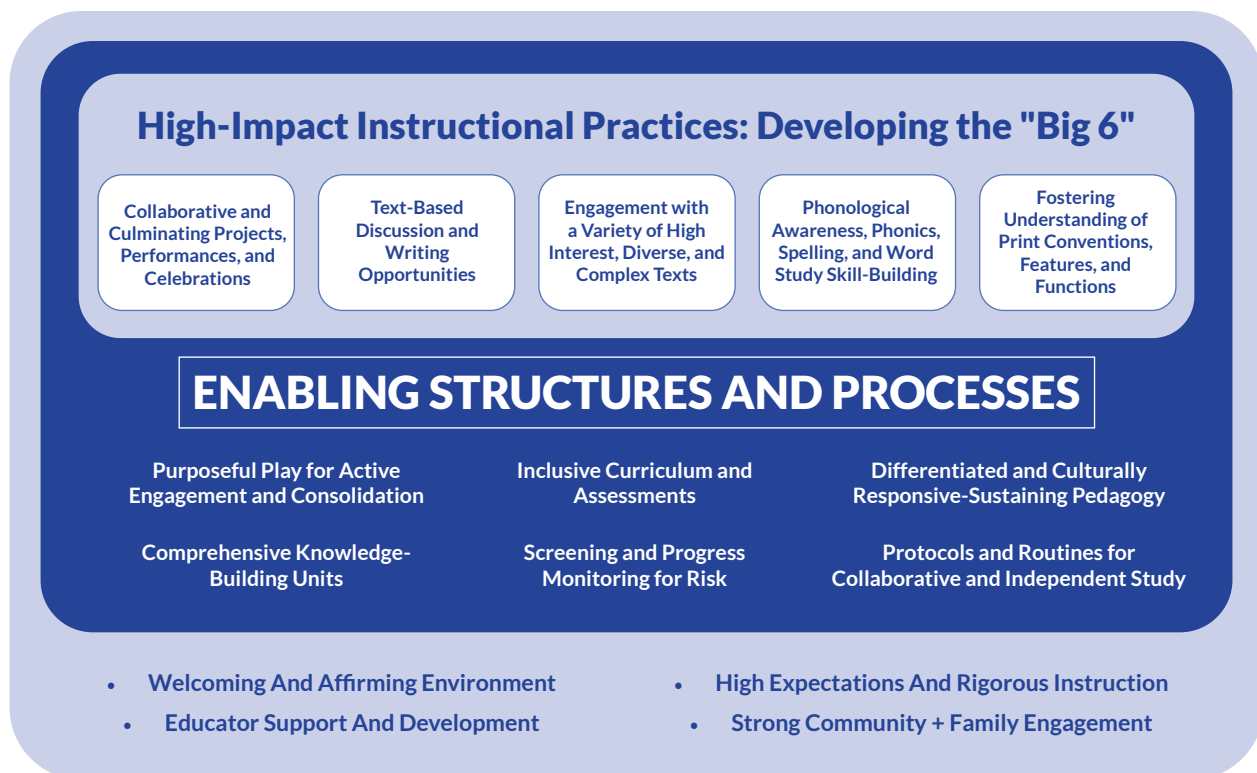PreK → Elementary Grades → Secondary Grades →

High-Impact Practices in Action: How Much Exposure? How Often?

Maximizing the potential of the high-impact practices requires a well-designed architecture that ensures a developmentally appropriate, meaningful approach to implementation. The graph below is a stylized visual to show the relationship between and among the practices in relation to time, and needed learner exposure and engagement in the elementary years. This distribution could be for a given day, week, month, or any specific period of time or unit.

Collaborative and Culminating Projects, Performances, and Celebrations	
Text-Based Discussion and Writing Opportunities	
Engagement with a Variety of High Interest, Diverse, and Complex Texts	
Phonological Awareness, Phonics, Spelling, and Word Study Skill-Building	
Fostering Understanding of Print Conventions, Features, and Functions	

High-Impact Practice Distribution in Elementary

High-Impact Practices in Action: Which School and Classroom Structures and Processes?

Laying the foundation for lifelong literacy requires well-designed, high-quality learning environments. In these environments, there are enabling structures and processes to bring the high-impact practices to learners in ways that are developmentally appropriate and engaging.

High-Impact Instructional Practices: Developing the "Big 6"

Collaborative and Culminating Projects, Performances, and Celebrations	Text-Based Discussion and Writing Opportunities	Engagement with a Variety of High Interest, Diverse, and Complex Texts	Phonological Awareness, Phonics, Spelling, and Word Study Skill-Building	Fostering Understanding of Print Conventions, Features, and Functions

ENABLING STRUCTURES AND PROCESSES

Purposeful Play for Active Engagement and Consolidation	Inclusive Curriculum and Assessments	Differentiated and Culturally Responsive-Sustaining Pedagogy
Comprehensive Knowledge-Building Units	Screening and Progress Monitoring for Risk	Protocols and Routines for Collaborative and Independent Study

- Welcoming And Affirming Environment
- High Expectations And Rigorous Instruction
- Educator Support And Development
- Strong Community + Family Engagement

High-Impact Practices in Action: What Do These Look Like in Elementary Settings?

	What Does This Look + Feel Like?	What Skills are Fostered?	Whats Structures And Processes Are Needed In a Elementary Literacy Setting?
Collaborative and Culminating Projects, Performances, and Celebrations	Learners plan and work together, express themselves orally and in writing, and showcase their thoughts and ideas in an extended project, performance or celebration.	Learners develop social emotional skills, especially executive functions and collaboration skills, including perspective taking, and cultivating their creativity while building up the "Big 6."	• A plan to ensure the topics and content are directly connected to prior learning, to serve as opportunity to consolidate and extend learning. • Communication protocols and thinking routines to support collaboration.
Text-Based Discussion and Writing Opportunities	Learners engage in intensive interactive reading experiences with grade-level text; they are discussing, debating, and writing about what they've read—comparing information and perspectives across sources and conducting research.	Learners cultivate background knowledge, and hone critical thinking and communication skills, including argumentation, all the while actively engaging in identity formation and developing the "Big 6."	• Text sets with content-rich themes to support knowledge-building opportunities. • Protocols and routines to promote discussion and debate skills. • Tools for writing ideation, planning, and organizing information.
Engagement with a Variety of High Interest, Diverse, and Complex Texts	Daily classroom work features content-rich text sets, organized around the unit theme—and that span genres, affirm and broaden perspectives, and develop inclusive community.	Learners cultivate their critical thinking, perspective taking, and social-emotional skills while building the "Big 6."	• Units with text sets organized around the engaging, content-rich themes and that promote multiple perspectives and/or stances on any given issue or topic. • Talk and learning routines to support an inclusive learning environment.
Phonological Awareness, Phonics, Spelling, and Word Study Skill-Building	Learners engage in daily word work to master sound-symbol correspondences, develop metalinguistic skills, including morphological skills, and promote their understanding of word families and spelling patterns.	Learners are developing their metalinguistic skills, orthographic knowledge and awareness, and stamina for reading and writing work, all the while building the "Big 6."	• A systematic plan (i.e., scope and sequence) for developmentally appropriate work with phonemes, corresponding graphemes, and larger units such as affixes and root words. • Developmentally appropriate, multi-modal tasks, activities, and assessments to implement the plan.
Fostering Understanding of Print Conventions, Features, and Functions	Learners participate in activities that build metacognitive skills as they relate to text. Shared, guided, and explicit learning experiences help them to understand how print works, structures, patterns and purposes.	Learners develop metacognitive skills, and consolidate their knowledge that language and print carry meaning and how print works as a tool for learning, all the while building up the "Big 6."	• A systematic plan (i.e., scope and sequence) for building up metacognitive and text-based skills across the year. • A set of concepts of print routines that become part of daily instruction and that are taught in the context of shared text-based experiences.

Supporting Developing Readers With Identified Needs

Today's diverse population of learners includes English Language Learners and/or students with identified disabilities. When organizing for these populations, it is critical to ensure two things: that all students feel valued, understood, and represented, and that they have access to the rigorous, high-quality learning and teaching described in this briefs series. That high-quality approach involves attention to learning environments that reflect key principles of Universal Design for Learning (UDL):

- Presenting information and content in different modalities

- Ensuring multiple means of engagement and representation

- Using supportive digital learning tools and flexible class spaces to promote choice and investment

Many of these design principles are reflected in today's frameworks aimed at supporting students with identified needs, including Response to Intervention (RTI), Multi-Tiered Systems of Support (MTSS), and the Individuals with Disabilities Education Act (IDEA).

Case Snapshots

Julia is an inquisitive 4th grader who is most comfortable sharing her introspective ideas during "turn-and-talks". A recent unit on ancient Greece sparked Julia's passion for the topic; her favorite parts of the unit included personifying Greek gods and goddesses, learning Greek word roots, and exploring the theme of resilience that came through in the "Greek Myths" text set. In the fall of 1st grade, the universal screener identified Julia as "at risk" for reading difficulties. Further diagnostics identified a specific vulnerability in vocabulary and comprehension. During grades 1 and 2, she participated in daily literacy instruction with peers (Tier 1) and received additional comprehension support (Tier 2) through small-group structured lessons. Though she is no longer identified as "at risk," her progress is closely monitored using a screening assessment administered 3X/year.

Malcolm is a bilingual 1st grader whose parents are immigrants from Ghana. Malcolm's teacher recently completed a comprehensive training series that focused on the science that informs early reading instruction; since then, Mr. Kahn has increased opportunities for his students to apply their letter-sound skills to connected texts and tried new differentiation techniques. Malcolm loves listening to his teacher read books related to the current unit's theme—rain forests—and engaging in follow-along literacy tasks and activities during science. Nightly, Malcolm takes his decodable readers home and emulates his teacher as he reads aloud to his parents.

Case Analysis

1. Notice and name the high-impact strategies that are embedded in these literacy learning environments designed to reinforce the "Big 6" for Julia and Malcolm. What structures and processes allow for Julia and Malcolm to feel a heightened sense of accomplishment?

2. What specific aspects of Malcolm and Julia's routines, interactions, and experiences are likely to promote their social emotional skills and competencies?

Reflect and Analyze: Professional Learning & Strategic Planning

With an understanding of relative instructional time and practice distribution in an elementary setting, recognition of critical structures and processes, and knowledge of what high-impact practices look like and feel like at this level, use your take-aways to:

☐ Review curricula in use or select potential new ones; review and/or adjust literacy blocks or subject-area instruction.

☐ Audit students' instructional environments and experiences across classrooms and grades.

☐ Ensure implementation of both culturally and linguistically responsive-sustaining and practices for inclusion, belonging, and academic rigor.

☐ Consider the match with professional learning opportunities for educators.

☐ Examine vertical instructional trends across PreK, elementary, and secondary classrooms within a school or district.

Key References & Resources

References

Catts, H. W., & Hogan, T. P. (2020). Dyslexia: An ounce of prevention is better than a pound of diagnosis and treatment.

Duke, N. K., & Cartwright, K. B. (2021). The science of reading progresses: Communicating advances beyond the Simple View of Reading. *Reading Research Quarterly*, 56(S1), S25-S44.

Duke, N. K., Halvorsen, A., & Strachan, S. L. (2016). Project-based learning not just for STEM anymore. *Phi Delta Kappan*, 98(1), 14-19.

Duke, N. K., Halvorsen, A-L., Strachan, S. L., Kim, J., & Konstantopoulos, S. (2021). Putting PjBL to the test: The impact of projectbased learning on second-graders' social studies and literacy learning and motivation in low-SES school settings. *The American Educational Research Journal*, 58(1), 160-200.

Kim, J. S., Burkhauser, M. A., Relyea, J. E., Gilbert, J. B., Scherer, E., Fitzgerald, J., ... & McIntyre, J. (2022). A longitudinal randomized trial of a sustained content literacy intervention from first to second grade: Transfer effects on students' reading comprehension. *Journal of Educational Psychology*.

Lesaux, N. K., & Siegel, L. S. (2003). The development of reading in children who speak English as a second language. *Developmental Psychology*, 39(6), 1005.

Resources

Burkins, J. & Yates, K. (2021). Shifting the Balance: 6 Ways to Bring the Science of Reading into the Balanced Literacy Classroom.

Burkins, J. & Yates, K. (2023). Shifting the Balance, Grades 3-5: 6 Ways to Bring the Science of Reading into the Balanced Literacy Classroom.

Harvard Graduate School of Education. A matter of talk (Nonie Lesaux's 8X8). [Video file]. Retrieved from https://www.youtube.com/watch?v=yJCn3cn-gGo

Lesaux, N.K. & Marietta, S.H. (2014). *Making Assessment Matter*. New York: Guilford Press.

Lesaux, N.K. & Russ Harris, J. (2015). Cultivating Knowledge, Building Language Literacy Instruction for English Learners in Elementary School. Portsmouth, N.H.: Heinemann.

Proctor, C. P., Silverman, R. D., & Jones, R. L. (2021). Centering Language and Student Voice in Multilingual Literacy Instruction. *The Reading Teacher*, 75(3), 255-267.