FEATURE

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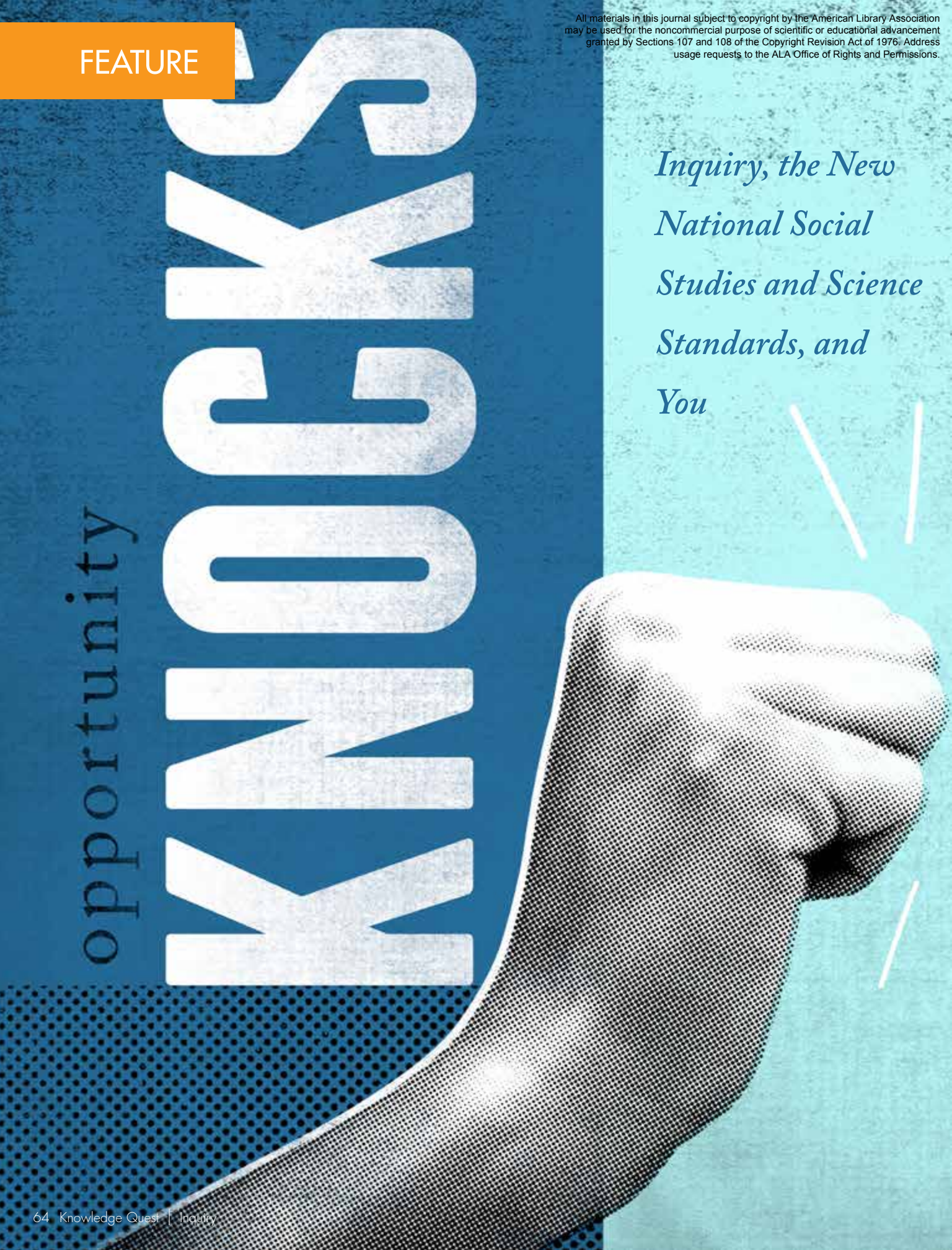
opportunity

Inquiry, the New National Social Studies and Science Standards, and You



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In an attempt to be excellent parents, we frequently strapped our two boys into their back seat restraints and took mind-numbing rides to historic sites, museums, and distant natural wonders. Pinned down back there, they fought despair with crackers and a game called "I'm that!" Rife with gasoline-driven lust, lightning-quick reflexes, and brother-against-brother power struggles, they would spot hot, huge, unique, cool, loud, turbo-charged vehicles around them and call out "I'm that!" The ownership and personal enhancement that came with the call, qualitatively aligned with the vehicle spotted, gave them the sweet and victorious one-upmanship every brother craves. We drove on.

The strategic school librarian lives in a parallel dimension to the competitors in our back seat. Indeed, in time and space that librarian is in motion, with a swift current of vehicles purportedly representing best practices speeding by. Some go unnoticed. Some are hot or cool. Some are powerful but overwhelming. Sometimes standards fall in that last category. To be recognized and adopted, the promise and potential of national standards must validate the instructional role of the school librarian and build formative knowledge through authentic process and products. Inquiry is a direct link to those dimensions.

Curricular standards that resonate with brain-based learning and respond to the compelling research that supports it, embed the inquiry process in learning. As school librarians know, inquiry works when rote learning and traditional attempts at "content coverage" fail. Cognitive development must be reflected in quality standards, with benchmarks for levels. Standards that merit adoption and our attention build formative knowledge with unifying concepts that are deeply understood. The brain has limited short-term memory capacity and quickly forgets information bits that lack context or meaning. Meaning emerges as learners manipulate, use, and apply concepts in authentic student work. Ultimately, standards must require learners to demonstrate skills and understanding, draw conclusions, analyze, and think critically.

Standards that are rigorous and relevant optimize the developing brain's affinity for building relationships among ideas, attending to what is compelling, and making sense out of information. Strategic school librarians heed the news flash. Opportunity is knocking. Inquiry- and brain-based learning has arrived in national curricular guides, and it looks a lot like a lifeboat.

School librarians could shout "I'm that!" when inquiry process helps to launch change with the Common Core State Standards (CCSS). School librarians can shout "I'm that!" when reviewing the national social studies and science standards. The choice to implement these standards brings learners to the information environment and information literacy, on a path to deep content knowledge.

Lift an observing eye out of the fray and see the inquiry-driven innovations not to be missed. The school librarian who recognizes the potential of the College, Career, and Civic Life (C3) Framework for Social Studies State Standards and the Next Generation Science Standards opens a doorway to rigorous collaborative practice aligned with the Common Core State Standards. To the benefit of school library programs, CCSS ELA literacy standards are a part of these 2013 inquiry-driven packages of social studies and science standards.

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"Now more than ever, students need the intellectual power to recognize societal problems; ask good questions and develop robust investigations into them; consider possible solutions and consequences; separate evidence-based claims from parochial opinions; and communicate and act upon what they learn. And most importantly, they must possess the capability and commitment to repeat that process as long as is necessary." (NCSS 2013, 6)

school librarians in curriculum transformed for critical thinking, research, and life-long learning. Many school librarians have expertise to bring to the table as these standards are implemented. Question development, the process of inquiry, evaluating sources, and using evidence are part of school librarians' skill sets.

AASL and Inquiry

In the past two decades inquiry has become a booster rocket for teaching and learning in many school libraries. AASL's *Standards for the 21st-Century Learner* are based on effective and motivational pedagogy that is brain-based and inquiry-driven. These standards align with the CCSS on many levels. A comprehensive crosswalk is available on the ALA website at <www.ala.org/aasl/standards-guidelines/crosswalk>. AASL standard 1.1, for example, states: "Follow an inquiry-based process in seeking knowledge in curricular subjects and make real world connection for using this process in own life" (2007, 4). CCSS Writing Standard 9-10.7 states:

> "Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation." (CCSS Initiative 2010)

The Common Core State Standards and both discipline-specific guides referenced here set the same standard, with strong emphasis on problem solving and real-world connections. These standards

"Young people need strong tools for, and methods of, clear and disciplined thinking in order to traverse successfully the worlds of college, career, and civic life." (NCSS 2013, 15)

target deep understanding and formative knowledge that grows out of questions, background building, investigation, evaluation, synthesis, communication, and reflection. All three frameworks easily resonate with AASL's *Standards for the 21st-Century Learner*, creating a powerful convergence and common ground.

- Inquire, think critically, and gain knowledge.
- Draw conclusions, make informed decisions, apply knowledge to new situations, and create new knowledge.
- Share knowledge and participate ethically and productively as members of our democratic society. (AASL 2007, 3)

School librarians who invest in inquiry have a premium of expertise to bring to national standards reform. Many school librarians have already implemented student-centered processes, higher-level thinking, and questioning. In a school library, big ideas are synthesized from details, and meaningful and authentic investigations do not start or end with one right answer. Learners go to the school library to discover, uncover, connect ideas, and analyze—a redirect from content coverage in the classroom. In the school library learners manipulate, use, and apply the background information and big ideas of the content at hand. Skills and habits of mind for a viable future are mastered.

Higher education and employers need high school graduates who can make informed decisions, solve problems, and negotiate and appreciate perspectives. The ability to interrogate evidence-based arguments and generate a conclusion based on original thinking is imperative for every learner. Graduates must be effective communicators and collaborators. Inquiry is the key.

College, Career, and Civic Life (C3) Framework for Social Studies State Standards

Published by the National Council for Social Studies in 2013, the College, Career, and Civic Life (C3) Framework for Social Studies State Standards is a richly collaborative response to the merger of social studies and ELA in the CCSS. The C3 Framework's stated purpose is to provide guidance to states and practitioners enhancing the rigor of K–12 civics, economics, geography, and history curricula. Teachers, curriculum developers, and school districts are also in the target audience. A PDF file of this framework can be found at <www.socialstudies.org/system/files/c3/C3-Framework-for-Social-Studies.pdf>.

The fifteen professional organizations and thousands of contributing practitioners who crafted these frameworks set their GPS for the school library with the goal of building critical-thinking, problem-solving, and participatory skills of learners. The universal value of knowledgeable, thinking, and active citizens moves the framework forward. The C3 Framework for social studies embraces the arc of inquiry with four library-friendly dimensions:

- Developing questions and planning inquiries
- Applying disciplinary concepts and tools
- Evaluating sources and using evidence
- Communicating conclusions and taking informed action.

Proactively addressing the ineffectiveness of instruction driven by textbooks, rote response to end-of-chapter questions, and multiple-choice tests, the C3 Framework commits to fostering real-world connections and meaning. Truly and essentially rigorous overarching ideas and unifying concepts provide the architecture for the framework, which posits the guiding principles below:

- Social studies prepares the nation's young people for college, careers, and civic life.
- Inquiry is at the heart of social studies.
- Social studies involves interdisciplinary applications and welcomes integration of the arts and humanities.
- Social studies is composed of deep and enduring understandings, concepts, and skills from the following disciplines: civics, economics, history, and geography.
- Social studies emphasizes skills and practices as preparation for democratic decision making.
- Social studies education should have direct and explicit connections to the Common Core State Standards for English Language Arts and Literacy in History/Social Studies.

Big Ideas to Take Away: C3 Framework

- Each of the four C3 dimensions (see above) are expanded by specific performance indicators and cross-walked with CCSS ELA literacy standards.
- The framework uses performance indicators to communicate desired learning outcomes.
- The indicators have continuity across a range of grade levels, with progressive levels of rigor.
- Questions and the desire to answer them give life to inquiry and, thus, to the C3 Framework. Questions arise from students' innate curiosity about the world and from their efforts to make sense of how that world works. Questions are generated by teachers and students.
- Higher-level questions are compelling and supporting, propelling inquiry forward.
- Civics, economics, history, and geography disciplinary concepts are addressed.
- In the inquiry process, the skills students need to analyze information and come to conclusions are important.
- These skills focus on gathering and evaluating sources, and then developing claims and using evidence to support those claims.
- Students communicate and express their conclusions, and move on to take informed action.
- Students draw conclusions based on close reading of informational texts from the time period in which events occurred as well as secondary sources that analyze retrospectively.
- The CCSS ELA standards, particularly Reading for Information 1, Writing 7, and Speaking and Listening 1, are consistently embedded.
- The history strand illustrates the broad conceptual approach taken by the framework. The most important big ideas relative to a discipline are concisely listed and scaffolded.
- Each specific indicator requires conceptual understanding and could easily be used for a high-quality essential question.
- The history strand, as an example, focuses on change and continuity, perspectives, historical sources and evidence, and causation and argumentation.
- A global perspective, decision making, evidence-based argument, and critical thinking characterize the framework.

> ***"The heart of the C3 Framework lies in the Inquiry Arc and the four Dimensions that define it. But no inquiry is generic; each takes root in a compelling question that draws from one or more of the disciplines of civics, economics, geography, and history." (NCSS 2013, 66)***

Next Generation Science Standards

A second prospect for curricular innovation and collaborative planning is the *Next Generation Science Standards* (NGSS) available at <www.nextgenscience.org/next-generation-science-standards>.

Published in 2013, the standards were developed by a consortium of twenty-six states in a process managed by Achieve, Inc. These organized and scaffolded science standards merge conceptually with CCSS ELA literacy. That merger provides a common ground for school librarians to support short and sustained research and engage in collaborative practice with teachers. ELA standards built into the NGSS culminate in student research with expository writing, making and supporting evidence-based claims, and even creating narratives based on scientific knowledge.

For example, a middle school NGSS standard addresses interdependent relationships in ecosystems. As a part of the standard, CCSS ELA literacy standards in science and technical subjects for that level are embedded. Making a distinction between fact and opinion in a text, critically analyzing and evaluating an argument in a text, writing explanatory texts to convey ideas, and speaking to support claims with evidence are all built into the science standards.

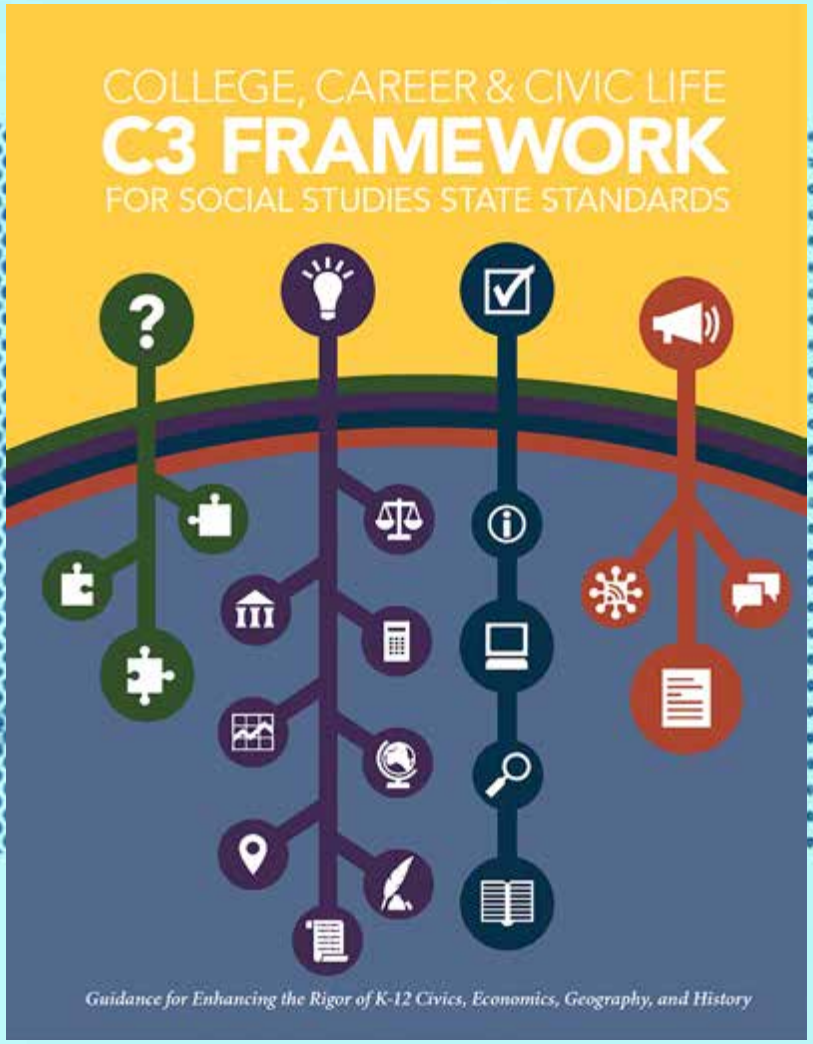
The need for quality information, critical thinking, and evaluation of sources for objectivity and authority demands the active role of the school librarian. Discipline-specific higher-level thinking and problem solving form a rich and consistent spine for the widely adopted science standards. Carefully developed and reviewed

by the National Research Council, National Science Teachers Association, American Association for the Advancement of Science, and Achieve, the Next Generation Science Standards call for research that culminates in knowledge products created by learners' synthesizing information. Evidence-based claims and decision making are characterized by rigor and relevance. These standards explicitly and comprehensively build scientific inquiry into their core.

Big Ideas to Take Away: Next Generation Science Standards

- The standards connect scientific concepts across disciplines and frame scientific knowledge as it is experienced in the real world.
- Authentic knowledge products frequently involve investigation, analysis of data, use of information resources, and synthesis.
- ELA literacy standards are embedded.
- Disciplinary core concepts, scientific practices, and concepts that cut across all standards are featured together in each standard.
- The NGSS have a goal of improving student performance and fostering development of deep understanding of concepts.
- Knowledge of science and the practice of scientific inquiry are mutually reinforcing in these standards.
- The standards use performance indicators to communicate desired learning outcomes across grade levels.
- The indicators become more rigorous as students progress but connect to core concepts that

"Active and responsible citizens identify and analyze public problems; deliberate with other people about how to define and address issues; take constructive, collaborative action; reflect on their actions; create and sustain groups; and influence institutions both large and small." (NCSS 2013, 19)



"Helping students develop a capacity for gathering and evaluating sources and then using evidence in disciplinary ways is a central feature of the Inquiry Arc." (NCSS 2013, 18)

Evidence-based claims and decision making are characterized by rigor and relevance. These standards explicitly and comprehensively build scientific inquiry into their core.

are the architecture for the standards.

- Students demonstrate understanding of core concepts in authentic products such as debates, evidence-based claims, models, and persuasive writing.
- The standards have a goal of moving learners from novice to expert in their scientific knowledge and thinking by learners' use of scientific practices, often based on inquiry.
- Physical sciences, life sciences, earth and space sciences, engineering, technology, and the application of science are the disciplines for which the NGSS are intended.
- Mathematical standards are embedded, highlighting the connections between science and math in relation to core concepts.

Conclusion: Common Ground for the Common Core

As a way to ensure deep understanding of key concepts, both the social studies and the science standards incorporate question development, use of information, close reading, consideration of opposing perspectives, arguments supported with evidence, and the inquiry process. Both sets of standards explicitly embed CCSS ELA literacy standards into their frameworks. Both sets of standards take an inquiry path to synthesis and evidence-based conclusions. Both sets of standards culminate in writing, speaking, listening, thinking, and communicating. Both sets of standards lead to deep conceptual understanding with global scope and even action by learners. Both sets of standards are connected to the real world.

Developing a deep understanding of these frameworks pulls the school librarian into the high-occupancy vehicle lane on the learning highway. Partnering with grade-level teachers and subject specialists, the school librarian is not stuck alone in a reactive gridlock. Leading for learning, the school librarian is in a vehicle geared to college- and career-readiness, and learners who think, create, share, and grow—learners for life.

Mary Boyd Ratzer *is coauthor (with Paige Jaeger) of Libraries Unlimited titles* Rx for the Common Core: A Toolkit for Implementing Inquiry Learning *(2014) and forthcoming* Think Tank Library: Brain Based Learning Plans for the New Standards, Grades K–5 *(December 2014) and* Think Tank Library: Brain Based Learning Plans for the New Standards, Grades 6–12 *(March 2015). She has been a school librarian at Shenendehowa Central Schools in Clifton Park, New York, for thirty-seven years. For twenty years she has been an adjunct instructor at the University at Albany, Department of Information Studies, teaching curriculum development. She is also a professional development consultant for inquiry learning, instructional design, and the Common Core. Her business is Learning Curve Associates.*

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