



Combining Reading and Language Skills within a Science Curriculum

THE AUTHOR

Nancy Larson® *Science K–5* is an innovative science curriculum authored by Nancy Larson and published by Nancy Larson Publishers. Nancy Larson, the author of the highly successful *Saxon Math K–4*, was encouraged to expand to other subject areas by teachers who had excellent results through using her math curriculum. Many of those teachers expressed a desire for a science curriculum that uses Larson’s proven methodology and teaches across the content areas. Recognizing the importance of developing reading skills in nonfiction text, Nancy Larson embarked on a new venture to provide a quality science program that incorporates tested reading strategies, while providing comprehensive and challenging content.

UNIQUE DEVELOPMENT

Nancy Larson developed this new science curriculum with a team of teachers at each grade level. Each grade-level team included six to eight teachers who have taught at their grade level from eight to thirty-eight years.

These individuals included a language arts curriculum coordinator, a reading literacy coach, and reading teachers. During the development phase, a Title 1 reading specialist provided additional expert knowledge to help establish the use of nonfiction text structures and text features.

The development began with *Science 1–3*. After each lesson was written, writing team members taught the lesson to their classes to see if the lesson was appropriate for students at their grade level. Teachers provided input, and the lessons were modified for the next field test year. The final stage was to conduct a larger field test, consisting of more than 270 teachers from 17 different states. These teachers provided feedback on grade-level appropriateness of science content, effectiveness of reading strategies, usability of lesson format, and children’s success in mastering the material. Through this feedback, final revisions have assured that each lesson will provide a successful learning experience for students.

READING STRATEGIES

In addition to the input of the reading specialists on the development team, Nancy Larson incorporated results from reports such as the National Reading Panel’s “Teaching Children to Read.” The findings on using vocabulary to increase reading skills and comprehension helped to support the use of **Science Word Wall** cards in *Science 1–5*. Masters for individual student word cards are included for *Science 1–5*.

The Science Word Wall words are also in boldface print in *Science 1* and *Science 2* student texts. Students receive vocabulary instruction through introduction to the word card before reading the text. This allows students to become familiar with new vocabulary words emphasized in the lesson. Students are better able to comprehend the text when they have an understanding of the important words being presented. Boldfaced words are not used in *Science 3–5*. Instead, the program teaches the students how to read for important information

and to highlight the important words and information within the student text. In *Science 2–5* students learn how to use the boldface and highlighted text to go back and find answers for questions on the student Lesson Reviews and Study Guides.

Students come to school with differing amounts of background knowledge, or schema, for every

science concept taught. Nancy Larson Science helps **build schemata** for those students with less knowledge of the new science concepts. Building students’ schema provides each student a better opportunity to be successful in comprehending nonfiction text. Before the student text is read, students’ schema is built through discussion, photographs, modeling, demonstration, hands-on activities, and experimentation.

Shared reading is a strategy that is well researched and is especially effective in improving comprehension of nonfiction text. Students follow along while the teacher (or a student when appropriate) reads the text aloud, modeling fluency and pronunciation of the new vocabulary. Although some classrooms might consist of

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students who all have the ability to read the text independently, the importance for the first read to be a shared read is highly correlated to student comprehension and mastery of science content. Shared reading provides excellent practice of listening skills, as well as modeling good reading practices. It assures correct pronunciation of difficult words and assures that comprehension is not lost due to the lack of fluency. In *Science 1*, lesson charts allow teachers to model beginning reading fundamentals, such as concepts of print, finding titles, reading left-to-right, page numbers, finding their place on the page by using paragraph numbers, and other beginning reading skills.

Rereading nonfiction text several times allows students to internalize new concepts. A Program Overview lists reading strategies for rereads in *Science 1–5*. The use of these strategies, of course, depends on the reading level of students. Some of the strategies emphasized are partner reading, choral reading, silent independent reading, and oral independent reading.

ORAL LANGUAGE DEVELOPMENT

Oral language is developed through classroom discussions. Students verbally review past concepts taught, and are encouraged in each lesson to share what they learned that day. Critical thinking questions on lesson reviews titled “Use What You Have Learned” promote class discussion of real life situations. The slide shows and photographs on our website provide additional opportunities for children to develop oral language skills as they discuss their observations. These resources are especially beneficial to English Language Learners and students with limited vocabulary.

WRITING SKILLS

Another emphasis of the program is the development of writing skills. The program provides direction for teachers to model how to answer simple questions. Next, students are encouraged to express what they have learned within a topic area by writing answers to questions in complete sentences. Finally they do research projects. This includes researching new facts, documenting learned facts, and presenting the project both in written and oral formats.

Lesson Reviews, Study Guides, and Assessments are an integral part of this program. Incorporated into these student activities are a wide variety of types of questions. These methods include such types of questions as multiple-choice, cause and effect, classifying, sorting, true/false, matching, labeling, illustrating, short answer, and essay. All levels work on critical thinking skills. Students in *Science 2–5* have an emphasis on definitions of important science words learned throughout the lessons. Student materials provide children with skills to be successful on state and national science and reading assessments, while giving teachers a clear understanding of student comprehension and mastery.

EFFECTIVE INSTRUCTIONAL TECHNIQUES

Nancy Larson Science provides excellent opportunities for effective instruction. Through all the grades, lessons include grouping of students in all different situations for increased learning. Lessons provide mastery in teaching skills and a wealth of strategies and information for teachers, not only in content but also in classroom management.

Finally, scaffolding of learning is a strength of this program. This is done not only in science content, as the lessons build upon previous knowledge and continually refer back to things learned in earlier lessons, but also in building reading skills. The curriculum starts with modeling concepts of print and beginning reading skills, progresses to identifying paragraphs and topic sentences, and scaffolds on these skills to the point where students are highlighting facts and important information within the passages. Embedded throughout the program are methods for remembering important information, taking notes, listing important facts, and using graphic organizers.

EXCITING AND CHALLENGING CURRICULUM

Nancy Larson *Science K–5* is a tested curriculum that provides the opportunity for students to find success in nonfiction reading comprehension, coupled with an exciting and challenging science curriculum designed for long-term retention. Combining the well-defined reading strategies with the challenging science curriculum helps unlock the imagination and dreams of the 21st century student.

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