

Text Roles

Text Role	Function	Description	Example from Seeds/Roots
Providing Context	Invite students to engage with the context	Text can support firsthand inquiry by providing an invitation for students to engage with the scientific content. Texts that serve this invitational function may engage students by representing new ideas or phenomena in interesting ways or by presenting the familiar in a new, scientific frame. Text can prepare students for inquiry by inspiring students to wonder about science.	What if Rain Boots Were Made of Paper? The Seeds/Roots physical science unit on mixtures includes an introductory book that engages students in thinking about the relationship between properties, materials, and human-made objects by exploring mismatches, such as rain boots made of paper and frying pans made of rubber.
	Introduce domain and/or context	Text can introduce the scientific domain or context for the unit.	Walk in the Woods The Seeds/Roots unit on forest floor habitats includes a book depicting a walk through the woods, so students understand the context of the model habitat they study.
	Connect to the world outside the classrooms	Text can connect firsthand investigations to the world outside the classroom.	The Black Tide The Seeds/Roots shoreline unit includes an activity in which students create a model oil spill in a bucket. This firsthand activity is supported by a book about an oil spill in Spain that helps students connect their firsthand experience with the causes and consequences of a real oil spill in the ocean.
Delivering Content	Deliver science information	Text can present scientific concepts and facts. This is the most traditional role for text in science. And, as Palincsar and Magnusson (2001) suggest, it is an authentic role: "...the notion that inquiry must be exclusively activity based is problematic because, in fact, much of what we know about scientific reasoning has been acquired through the thinking and experiences of others; that is, through learning in a second-hand way." (p. 152)	All About Roots All of the books in the Seeds/Roots series deliver science information. Some present scientific content incidentally as they, for example, discuss the work of particular scientists. Other books are designed principally for delivering information, including reference readers and "all about" books, such as a book all about plant roots that students read after they have observed and compared several root structures firsthand. The delivery of information is intended to connect and supplement, not to supplant, students' firsthand investigations.
	Provide information and explanation about unobservable phenomena	Text can provide information about and even illustrate phenomena that would otherwise be unobservable in a classroom context. Phenomena may be unobservable because they are too small, too big, or too distant for us to see firsthand.	Solving Dissolving The Seeds/Roots mixtures unit includes a book about dissolving, which is designed to help students understand the process of dissolving, including the fact that substances are still present when dissolved in liquid, although they are no longer visible to the naked eye. This book helps students make sense of their firsthand investigations of mixtures, and it helps them use an understanding of solubility to select materials for their to use in the products they design.

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Modeling	Model inquiry processes	Text can provide rich models of scientific inquiry skills, including what careful observation involves, all about comparing and classifying, as well as making inferences and explanations based on evidence.	My Nature Notebook The Seeds/Roots series includes several books that describe children or other people engaged in the inquiry or invention process to solve problems. For instance, one book depicts a student observing and recording change over time in one special spot in nature. Students working on the unit use these text-based demonstrations to guide their own investigations.
	Model literacy processes	Text can model the use of reading and writing strategies and can provide models of particular text genres. Text can also model scientific modes of communication, including evidence-based explanations and argumentation.	Sea Otter Report All of the books in the Seeds/Roots series are designed to support students' reading fluency and development of academic language. Most also provide opportunities to practice comprehension strategies, use of the features of informational text, and writing strategies. One book models how to write a report. Students refer to the steps in the text as they write their own reports.
	Model nature of science	Text can provide insights into the scientific enterprise and scientific dispositions. Text can model the wondering, exploring, and testing that are the heart of scientific literacy (Yager, 2004). Books can model the missteps and dead ends, as well as the successes of science and the application of scientific work to everyday dilemmas. Text can demonstrate human and commercial uses for science	Habitat Scientist/Jellybean Scientist Each of The Seeds/Roots curriculum units includes one or more readers focused on the life and/or work of a particular scientist. The scientists describe their interest in science, demonstrate scientific habits of mind such as persistence and curiosity, and share their work. They model excitement, passion, and investment. These texts describe not just the lives of a few, famous scientists, but of scientists in different stages of their careers, in different disciplines, and from diverse backgrounds.
Supporting Second-Hand Inquiry	Provide text-based experience with data	Text can provide data on which the reader is challenged to draw conclusions and develop claims. Second-hand investigations can allow students to investigate phenomena that are not easily modeled in classrooms. Text can also help students focus their investigations and set goals for their learning in firsthand investigations.	Snail Investigations Several of the books in the Seeds/Roots series present information and ask students to draw conclusions. In a book about students conducting investigations related to snail habitats, students are asked to draw conclusions based on data tables and descriptive evidence.

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Supporting Firsthand Inquiry	Provide information that facilitates firsthand investigations	Text can provide information that students bring to bear on firsthand investigations.	Handbook of Interesting Ingredients In the Seeds/Roots mixtures unit, students use a reference reader to plan their inventions. Having a reference with information about the properties of available materials, supports students in making informed choices about the materials they will use in their inventions.
	Support students in making sense of firsthand investigations	Text can help students make sense of their firsthand investigations and draw conclusions about their data. It can provide an opportunity for students to support and/or revise their thinking based on the addition of new information in text. It can address misconceptions that might arise in the conduct of firsthand investigations.	Gary's Sand Journal In The Seeds/Roots shoreline unit, students use a scientists' notebook reader to find information for their beach bucket investigations and draw conclusions about the composition and formation of the sand in their buckets.