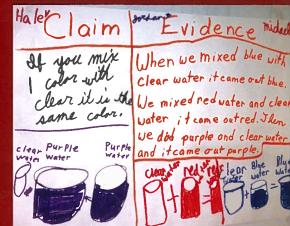
Lori Norton-Meier • Brian Hand • Lynn Hockenberry • Kim Wise

Questions



Claims



and Evidence



The Important Place of Argument in Children's Science Writing

## Contents

Dedication	***************************************	V
Acknowledgen	nents	ix
Chapter 1	Questions, Claims, and Evidence: Examining Our Approach to Science Teaching and Learning	1
SECTION I	Building Our Knowledge Base for Questions, Claims, and Evidence	5
Chapter 2	Learning Is About Understanding (Theory and Practice)	8
Chapter 3	Teaching So Children Can Learn	18
Chapter 4	Writing as an Essential Element of Science Inquiry	43
SECTION II	Creating a Space in the Classroom for Questions, Claims, and Evidence	61
Chapter 5	What Makes a Question Good?	65
Chapter 6	Good Questions Lead to Evidence	78
Chapter 7	What Evidence Leads to Claims?	93
Chapter 8	Claims to Reflection and the Summary-Writing Experience	105
SECTION III	Getting Started and Examining Our Own Teaching and Learning with Questions, Claims, and Evidence	127
Chapter 9	Implementing Your First Unit and Measuring Your Progress	129
Chapter 10	Frequently Asked Questions and Benefits of This Approach	
Afterword—O	One Final Claim	155
Have a Go Appendix Overview		
1	Appendix A	
	Appendix B	
	Appendix C	
	Appendix D	166
	Appendix E	168
	Appendix F	171
	Appendix G	174
References		177
Index		179

I am so pleased that
this book is going to be
out in the professional
conversation, especially
in a time when science
teaching and the
understandings about
our world that come
about because of it get
pushed aside.

—Katie Wood Ray

Author of About the Authors

Lori Norton-Meier has been intrigued by children's stories since her time as a kindergarten teacher. She is currently an assistant professor at Iowa State University in Literacy Education. Her

Brian Hand is a science educator at the University of lowa who is involved in research on student learning and how we use language in science classrooms to help the learning process. Brian was a school teacher for eleven years before moving into the university system, where he has published in a wide range of journals.

areas of interest include early childhood literacy, science literacy.

Questions, Claims, and Evidence presents a new approach to science teaching that engages students fully by linking literacy and inquiry. With it you'll replace the lab reports of traditional science teaching with the writing of scientists searching for answers. And in the process, you and your students may well discover that you enjoy and learn from science time more than ever.

Step by step *Questions*, *Claims*, *and Evidence* immerses students in scientific inquiry and writing. It transforms experiments from following directions and making notes into chances to pose and answer questions that interest students. Its approach helps you:

- increase students' interest in science by showing students how to ask good questions and design their own experiments to answer them
- improve their analysis skills by giving them tools to make and support scientific claims
- boost their science writing by offering meaningful opportunities to argue for, reflect on, and summarize their findings.

But *Questions, Claims, and Evidence* doesn't only support student learning. It improves your science teaching by:

- broadening your professional knowledge with the latest research and theory
- providing self-evaluation tools for monitoring your performance
- answering frequently asked questions about the *Questions*, Claims, and Evidence approach.

Try something new that will motivate your students and improve their writing abilities. Read *Questions, Claims, and Evidence*, and don't be surprised if your students agree with this fifth grader's sentiment: "I tove the way that we do science now because I learn more and I get to do more. I actually feel like I am smart."



Lynn Hockenberry (left) is a twenty-four-year teaching veteran. She implemented the Science Writing Heuristic approach in *Questions*, *Claims*, *and Evidence* and knows the power that linking science with literacy has to engage students. Now a reading consultant with Loess Hills AEA 43 in Southwest Iowa, she provides literacy professional development to K-12 teachers.

A former elementary and middle school teacher. Kim Wise (right) has been involved in science education for lifteen years. Now a reading consultant with Loess Hills AEA 13, she provides professional development in the areas of science curriculum, instruction, and assessment.





