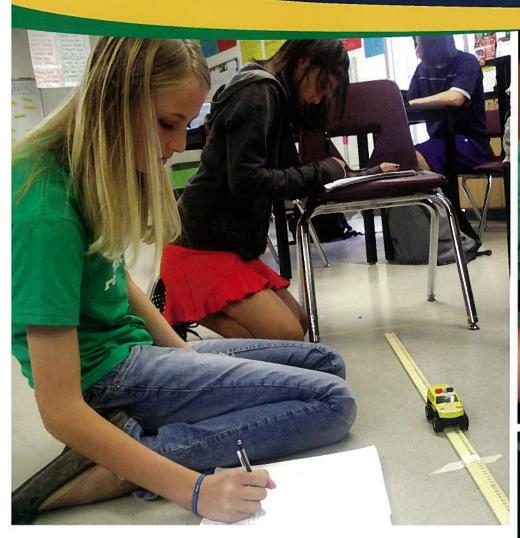
# TEACHING SCIENCE With Interactive Notebooks





## Kellie Marcarelli

Foreword by Rodger W. Bybee

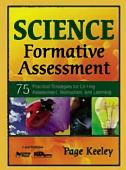
"Easy to read, with good examples and illustrations. The rationale is spelled out for every step, the setup for the interactive notebook is clearly explained, and you can hear the enthusiasm of the author, which makes the reader enthusiastic about trying the strategy."

— Maria Mesires, Seventh-Grade Science Teacher Case Middle School, Watertown, NY

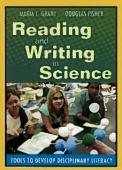
"In an era when science teachers are being asked more and more to teach writing skills and build science literacy, this book presents an engaging and creative way to answer that challenge and encourage the use of higher-order thinking skills."

—Michael Baker, Eighth-Grade Science Teacher Memorial Middle School, Albany, OR

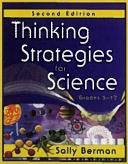
#### Other Books From Corwin:



ISBN: 978-1-4129-4180-8



ISBN: 978-1-4129-5614-7



ISBN: 978-1-4129-6289-6

## Increase student learning in the inquiry-based science classroom!

Interactive notebooks allow students to record and analyze observations, reflect on their learning, and self-assess their work. *Teaching Science With Interactive Notebooks* gives educators a step-by-step process for introducing notebooks and using them to develop students' communication skills, cognitive organization skills, and sense of responsibility for their own learning.

Packed with examples from actual student notebooks, this detailed guide explains the unique features that make interactive notebooks more effective tools than conventional notebooks for science classrooms. This resource

- Describes the nuts and bolts of implementing interactive notebooks, including execution, time management, and grading
- Uses the 5E Learning Cycle (engage, explore, explain, elaborate/extend, evaluate) as the framework for science instruction
- Emphasizes the importance of writing in science and provides strategies for modeling effective writing
- Explores strategies to encourage collaborative student inquiry and foster whole-class discussions

By implementing interactive notebooks in your classroom, you can gain deeper insight into each student's understanding, learning progress, and thinking!



2455 Teller Road Thousand Oaks, CA 91320 T: (800) 233-9936 F: (800) 417-2466 Corwin.com





### **Contents**

	<b>reword</b> Rodger W. Bybee	ix
Pr	eface	xi
	How This Book Is Arranged	xii
	Special Features	xiii
	Who This Book Is For	xiii
	Next Steps	xiii
Ac	knowledgments	xv
About the Author		xvii
1.	Introduction	1
	What Is an Interactive Notebook?	2
	How Are Interactive Notebooks Used?	2
	What Are the Benefits of Using Interactive Notebooks?	3
	What Research Supports Using Interactive Notebooks?	5
	A Closer Look at How Notebooks Support Effective Instruction	7
	What You Need to Know to Begin	17
	Classroom Snapshot	19
	Summary	19
2.	Organizing Notebooks for Learning	23
	The Components of the Science Unit	24
	Notebooks and the Learning Cycle	24
	Making Connections for Deeper Understanding	26
	The Genesis of the "Aha" Experience	26
	The Aha Connections	27
	The Steps From the Aha Connections to the Aha Thesis	29
	The Trigger Assignment	31
	Using the Teacher Notebook to Plan	35
	Summary	39
3.	Gaining Student Buy In and Ownership	41
	Personalizing the Interactive Notebook Visual Page	42
	Personalizing Unit Cover Pages	42
	Valuing Ideas and Promoting Community	45
	Choice Connections and Creativity	47

	The Need for Flexibility A By-Product of Ownership	49 49
4.	Using Notebooks During Investigations A Classroom Investigation Developing Student Thinking Engage and Explore: A Closer Look at the Input Page The Role of Questions Elaborate and Extend: A Closer Look at the Output Page Metacognitive Thinking Promoting the Use of Scientific Language A Continuum of Teacher-Student Interactivity Summary	51 53 54 57 59 61 62 63 66 69 71
5.	Getting Started: The First Three Days Choosing the Notebooks Day One Day Two Day Three Summary	73 74 75 79 81 94
6.	Using the Notebooks: Days Four to Seven Day Four Day Five Day Six Day Seven and Following Day-By-Day Review Summary	95 96 97 103 107 108 109
7.	Learning Through Writing Challenges in Implementing Writing Crosscurricular Connections Forms of Writing in the Interactive Notebook Modeling Writing Procedure Writing Summary and Conclusion Writing Writing a Self-Reflection Writing a Thesis Paper Assessment Summary	111 112 112 113 113 114 114 119 119 127 130
8.	Learning Through Discussion Features of Accountable Talk Introducing Accountable Talk Strategies for Accountable Talk Talking Tasks Whole-Class Discussions	133 134 135 136 138 140

Effective Questions and Discussion	141
The "Accountable Talk" Classroom	142
Summary	143
9. Conclusion	145
Student Benefits	146
Teacher Benefits	151
Resource A: Reproducibles	153
1. Interactive Notebook Rubric	154
2. Aha Connections Visual Outline	155
3. Words of Wisdom About the Aha Connections Visual Outline	156
4. Why We Keep Interactive Notebooks in Science	157
5. Interactive Notebook Thinking Processes	158
6. Constructing the Aha Connections Pages	159
7. How to Write an Aha Connections Thesis	160
8. How to Write a Self-Reflection	161
9. Table of Contents for Your Interactive Notebook	162
Resource B: Crosscurricular Connections	
References and Further Reading	
Index	171



Additional materials and resources related to Teaching Science With Interactive Notebooks can be found at http://www.corwin.com/teachingscience.