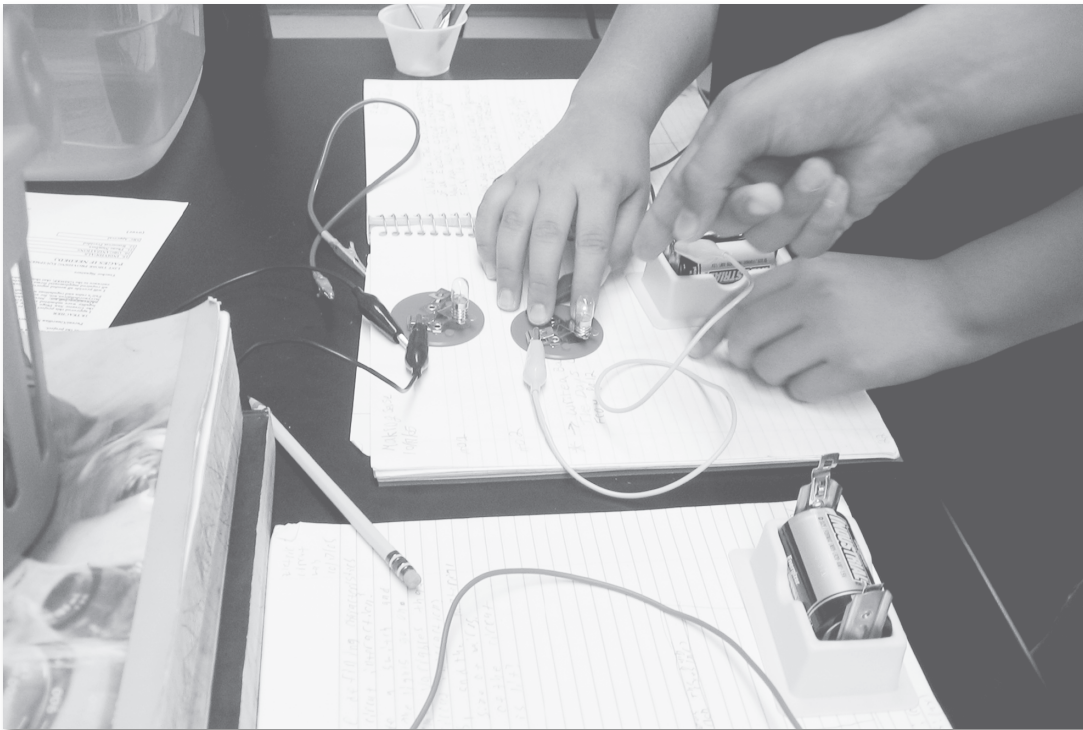


# Preface

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**A**n interactive science notebook is a highly beneficial learning tool that develops students' communication skills, cognitive organization skills, and sense of responsibility for their own learning. The idea behind interactive notebooks is to engage students in collaborative inquiry as a way of learning science content. Using the notebooks, students record their observations, ideas, and thinking, and they reflect on their learning in a variety of interactive ways. In addition, students can use the interactive notebooks to self-assess their work while gaining interdisciplinary skills and making connections across subject areas.

Students' own feelings about the benefits of using their interactive notebooks are telling. Abdullah, an eighth grader, wrote, "For me, the notebook shows a progression over the year and organizes all my thoughts and data into one place. This way it is much easier to compare results and correct errors." Nils, also an eighth grader, said, "My notebook allows me to show what I think. Being able to draw out and describe what I am thinking allows me to more vividly express my thoughts or opinions."

Students enjoy the freedom to express ideas learned from the curriculum in a way that is unique and makes meaning for them. Teachers use interactive notebooks to better understand where a student is coming from, what he or she is thinking, and what drives that thinking.

I have been using interactive notebooks in my middle-school science classroom for more than 14 years. I originally developed the idea for using interactive notebooks after attending an Advancement Via Individual Determination (AVID) conference and have been modifying their use with my students ever since. I am passionate about the use of interactive notebooks because I have seen how they can be powerful tools to increase student learning. Using interactive notebooks has changed my practice, and I have become a strong advocate for their use.

In this book, I explain how interactive notebooks work in my classroom. My goal is to provide a guide for science educators who want to use interactive notebooks with their students in order to enhance the learning experience. I also hope to offer new strategies to teachers who have been using interactive notebooks and want to take their students' notebooking to new levels.

## **HOW THIS BOOK IS ARRANGED**

Chapter 1 provides an introduction to the use of interactive notebooks in the classroom. I explain how notebooks are used, discuss the benefits of using notebooks, and examine what research shows about using notebooks.

Chapter 2 looks at how the organization of notebooks promotes learning. Here, I unpack the unique features that make the use of interactive notebooks more effective than the use of conventional notebooks in the science classroom.

Chapter 3 offers guidance for promoting students' buy in and ownership of their interactive notebooks.

Chapter 4 shows how interactive notebooks are used in the classroom for both teacher-guided work as well as student-generated work. This chapter includes a discussion of metacognitive thought processes and examples of student learning and understanding.

Chapters 5 and 6 describe the nuts and bolts of implementing interactive notebooks in the classroom. These chapters provide in-depth guidance for execution, time management, and grading the notebooks.

Chapter 7 emphasizes the importance of writing in science, provides strategies for modeling writing, and includes student examples. This chapter also introduces protocols for engaging students in self-reflective writing and thesis papers to solidify, extend, and express their learning. Chapter 7 also explores strategies for assessing student work.

Chapter 8 explores strategies to encourage students to talk and discusses the importance of collaborating with peers in order to expand their knowledge of scientific concepts.

Chapter 9 concludes the book with a review of the benefits of interactive notebooks.

## **SPECIAL FEATURES**

There are numerous examples of actual student work as well as checklists, time-management tips, and more. Reproducible pages are included in the Resources section at the end of this book.

## **WHO THIS BOOK IS FOR**

This book is designed as a tool for science educators who are interested in improving student content and process skills while promoting student engagement and understanding. Although I am a middle school teacher, other teachers have used this model successfully with elementary and high school students. Novice teachers have embraced these techniques and also experienced success. The book is designed as a working resource for teachers, just as interactive notebooks are a working resource for students. I encourage you to fill this book with your own ideas on sticky notes or in the margins, your reflections, highlighted key ideas, and taped-in student work samples.

## **NEXT STEPS**

Throughout this book, I share my processes and offer tips about what worked for me. Of course, you should feel free to adapt these ideas to meet the needs of your own students and teaching situation. I encourage you to read and reflect upon the processes and ideas in this book and then just do it—get your interactive notebooks up and running. Although the process I describe begins with a new school year, you certainly don't need to wait for a new school year to start. Any new science unit provides the perfect opportunity to begin using interactive science notebooks and harnessing their power as a learning tool.