

3 Keys to
SCIENCE

Discover the three
essential elements for
teaching science!

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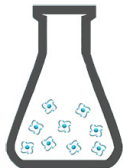
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Easy-to-use
SCIENCE PLANS
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The Three Keys to Science

I love science! But you might be surprised to know that it wasn't always that way for me. In fact, I entered my very first chemistry class with as much fear and trepidation as any other high school sophomore.

We had all been told by the upper classmen that this was far and away the most difficult class we would encounter. I still remember hesitantly taking my seat that first day. After all, biology hadn't gone the way I had planned the previous year, and this class was supposed to be far worse.

The uncertainty of the moment was causing my heart to clip along at a rapid pace. Glancing around at my classmates, I knew I wasn't the only one feeling that way.

The teacher waltzed to the rear of the room and shut off the lights. The sound of a collective gasp of fear echoed off the concrete walls. Whoosh – a Bunsen burner came to life at the back of the room. All heads swiveled and were quickly captured by the sight of a glowing purple mass just above the

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flame.

Not a sound could be heard as we waited to see what was next.

Fizz. Bang. Boom.

The glowing purple mass took flight!

It formed a shooting light trail that travelled from the back of the room before petering out at the front. We all let out a collective gasp, followed by oohing, as we watched the spectacle unfold.

Clip. Clip. Clip.

The teacher's heels rapped against the tile floor as she headed to the front of the room. She flipped on the lights, paused for our attention, and declared, "That was science!"

I think that my heart skipped a beat in anticipation of what she had in store. Thankfully, my teacher did not disappoint!

She told us how she had added a gummy bear to some sodium chlorate. How the heat from the Bunsen burner caused the sodium compound to melt and when the molten chemical met the gummy bear, it created an explosive reaction that sent the flaming gummy bear across the room.

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She shared with us what the chemical reaction looked like and then used that equation to explain to us what chemical equations should include and what they can tell us. She made sure to point out what we should be taking notes on and gave us homework for that night that reinforced what we had learned in class.

That very first day, my chemistry teacher used all three of the essential keys for teaching science. She captured our interest with a scientific demonstration, she shared information with us, and she made sure that we kept a record of what we were learning.

Not every day in her class was as exciting as the first one, but I learned so much. I fell in love with chemistry that year and eventually went on to get a degree in Biochemistry.

What are the three keys to science?

I have studied science for years. I have taught science to preschoolers on up, both in the classroom and in homeschool groups. There are three essentials that I believe must be included in each and every science plan. Each of these keys will help your students to gain a true understanding of the subject.

Key #1 – Performing Hands-on Scientific Tests

The first essential of a proven homeschool science curriculum is to have the students perform hands-on scientific tests. This will give them a chance to engage with the material they are learning, face to face, and to see science in action.

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These scientific tests can be:

- Teacher-led scientific demonstrations,
- Student-performed experiments,
- Nature studies,
- Science fair projects, or
- Interactive on-line demonstrations.

By performing regular hands-on scientific tests, the students see the concepts they are learning in action.

Key #2 – Gathering Information

The second essential of a proven homeschool science curriculum is to have the students gather information. In other words, they need to read about the science they have seen to learn more about the principles and concepts involved.

The students can read:

- Standard textbooks,
- Science-focused living books,
- Non-fiction works, or
- Age-appropriate encyclopedias.

By reading scientific information from any of the above resources, the students are learning the information they need

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to know.

Key #3 – Keeping a Record

The final essential of a proven homeschool science curriculum is to have the students keep a record of what they have learned. They need to write down the information they read about or saw during their experiment.

The students can do this through:

- Notebooking pages,
- Comprehension worksheets,
- Lapbooks, or
- Lab reports and experiment sheets.

By writing down what they have learned, the students are organizing and sharing with others the facts they have studied.

A proven science curriculum will have the students performing regular scientific tests, gathering information from reliable sources, and keeping a record of what they have learned. These three keys will work together to provide a solid science education for your students.

A Final Thought

We'll dig deeper into these three keys in the coming chapters, but before we get started, I wanted to share one more

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thing about me with you—one of my life goals.

One of my biggest goals in life is to give homeschool teachers, just like you, the tools you need to teach science. But not in the check-off-the-box-move-on-to-the-next-thing kind of way.

I want science to be the save-the-best-for-last kind of subject in your house. And when you use these three keys to formulate a customized plan for teaching science that fits your teaching style and your students' preferences, that is exactly what you will see.

About the Author

Hi-ya! I am Paige Hudson, which you probably already know since it is on the front cover of this book! I wanted to share a few things about myself with you so that you can get to know me a bit.



I first discovered my love of science during a high school chemistry course, during the now infamous gummy bear incident, which I wrote about in this first chapter. That love led to a major in Biochemistry at Virginia Tech.

Several years after graduation, a marriage to my best friend in the whole wide-world, and the miracle of becoming a mom later, I began writing a science curriculum. At first, it was just for our beautiful daughter to use, but with a little vision from my husband and a lot of elbow grease from us both, one curriculum has grown into a full company—Elemental Science.

My passion remains to see all students enjoy and excel in their pursuit of sciences. These days, you can find me writing from our home in the Appalachian Mountains in between homeschooling our two kids. In my spare time (those of you who are homeschool moms can feel free to snicker at the idea of “spare time”), I love to read, cook, and hike with my husband and two children.

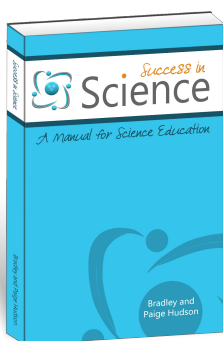
More by the Author

Success in Science: A Manual for Science Education lays out a clear road map for what and how to teach science.

In this book, you will learn:

- What the components of science education are, including your goals for each stage,
- Several methods that you can use to incorporate the various components into your science education plan,
- Practical examples of how to teach science at home, and
- Details about the research that supports the ideas laid out in the book.

Success in Science: A Manual for Science Education also includes lists of the important information you need to cover with each age group, as well as several articles on key concepts, such as the notebooking, nature study, and more.



*Success in Science is
your*
HOW-TO MANUAL
for science education!