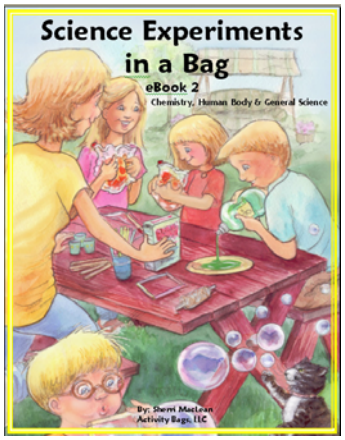


Greetings,

This book provides examples of 25 simple experiments you can do with your children. It is an introduction to the wealth of material in many other books available in libraries and bookstores. It might also inspire you to make up our own experiments and see why and how things turn out the way they do.

Science is not something mysterious. Being "scientific" involves being curious, observing, asking how things happen, and learning how to find the answers. Curiosity is natural to children, but they need help understanding how to make sense of what they see.

Parents help their children learn by reading to and with them, by helping them learn to count and calculate, by helping them begin to write, and in many other ways. Most parents, though, say they do not, or cannot, help their children with science. But we don't need degrees in chemistry or physics to help our children. All we need is a willingness to observe and learn with them, and, above all, to make an effort and take the time to nurture their natural curiosity.

I hope you use this book to have fun with your children while they learn. Whether they are baking a cake, filling the bathtub, or walking through the park, we can invite our children into the wonders of science. Often when we least expect it, a moment for learning will occur: like when a dollop of ice cream drops on the sidewalk and ants appear.

We play a crucial role in determining how much science our children learn. Our enthusiasm and encouragement can spark their interest. Fortunately, youngsters of all ages are curious and love to investigate. And the earlier we encourage this curiosity, the better.

Scientific knowledge is cumulative, so children need to start learning early--at home. Many of us assume that children will learn all the science they need at school. The fact is that most children, particularly in elementary school, are taught very little science.

As parents, we don't have to have a strong background in science to help our children learn science. What's far more important than knowing what sound is or how a telescope works, is having a positive attitude about science.

Every day is filled with opportunities to learn science--without expensive chemistry sets or books. Children can easily be introduced to the natural world and encouraged to observe what goes on around them.

Together, with this book, parents and children can….

- Learn how salt makes it harder for water to freeze
- Discover how mixing vinegar and baking soda can cause enough pressure to pop a cork
- Learn what the effects of light can have on your skin color
- Learn how a siphon works
- Learn how to identify substances by smell
- Learn how electricity charged objects attract or repel things around them

So, get started by finding some experiments in this book and trying them out with your children. Get a group of moms together and hold a swap, it is so much fun to do it that way, but you can assemble them on your own too.

Have fun!

Sherri ☺

What others are saying about *Science Experiments in A Bag:*

It's a bit of work at first, but if you do a little each day and share the work with a group of friends you are done! You've got science experiments for a year (except for a few perishables) ready to go. You can dig deeper by getting books at the library. ~ Bobbie B.

This is an inexpensive way to add hands on work to your science curriculum. I love that each person has to focus on supplies for ONE experiment, yet you get 20 for the effort! ~ Kelly P.

We LOVED the Science in a Bag experiments! They are so perfect for my little scientists who can't yet read well; I only need read them the instructions, which are very simple and easy to understand, and they can set off to experiment. They have enjoyed most of them very much, but the ones they REALLY enjoy, they remember how to do and ask to do them on their own over and over. The kits have been great as summer or school break activities, and I've been able to use several to match up to what we are studying, making it so easy for me to prepare a science lesson. For children who are reading and writing well, these would be great independent lessons too! ~ Lisa W.

The bags were easy to assemble; and I can't wait for the other experiments to do with my children. ~ Karen G.

These science experiments are really cool things to do with your kids during summer break. At least from my experience, I think both my 2 year old and my 8 year old would enjoy this experiment (on different levels of course). ~ Becky S.

These are great experiments for young children to be hands on. They can also be adapted to fit the needs of many skill levels. ~ Wendy C.

It's worth the time and effort, and a great way to get your kids to learn and be fascinated with the world God created. My daughter loves doing experiments and she can't wait to do more at home. Experiments in a Bag are perfect for our family! ~ Sue R.

Convenient, easy, inexpensive, fun, and most importantly educational. What more could a Mom want? ~ Beth L.

The experiments that we have tried have been fun and easy to do. My kids are always excited to try a new experiment and I try to let them assemble all the items necessary to do the experiment so they are active participants in the experiment. This is a great fun and quick activity to do with my kids that is also educational. ~ Debbie M.

Science Experiments in a Bag – Book 2 has been a great addition to our homeschool. We find an experiment to match what we are learning. Everything is in the bag, minus perishables, and we're all set to go! All my kids participate and I'm not running all over the house gathering supplies. ~ Pearlita M.

NOTE TO THE PARENTS

The experiments in this book are safe with appropriate supervision. Some require help from an adult. Children can carry out other experiments alone, if they are old enough. Look over the instructions first to see if your child may need supervision. Be sure your children who can read know which activities you do not want them to try by themselves.

Young children may not fully understand that bad things can happen to them. We don't want to scare our children away from science, but we must:

- Provide supervision when it is appropriate--for example, when using heat or mixing chemicals
- Teach children not to taste anything unless they know it is good for them and is sanitary
- Insist children wear goggles whenever fire or splatter could endanger eyes
- Teach children to follow warnings on manufacturers' labels and instructions
- Keep toxic or other dangerous substances out of the reach of young children
- Teach children what they can do to minimize the risk of accidents; and
- Teach children what to do if an accident occurs.

Results

Each experiment comes with an experiment log to record all your findings. We suggest putting all the logs in a binder to keep them together so they can be a record of what you have done. Keeping records is an important part of science. It helps us remember what didn't work as well as what did work. Someone asked Thomas Edison if he was discouraged after trying thousands of experiments, without results, to make the incandescent light bulb work. He replied:

> ***"Results! Why, I have gotten a lot of results. I know several thousand things that won't work."***

So before starting, get a binder to store your experiment observations. If your children cannot write yet, they can draw pictures of what they see, or you may want to take notes for them.

We should remember, too, that seeing isn't the only way to observe. Sometimes we use other senses; we hear, feel, smell, or taste some things (children should be careful, of course, about what they taste).

Science can be learned in many places and environments and just as easily from everyday experiences as from formal projects and experiments. We can get our children interested in science with simple toys, books, and objects around the house and have fun while we're doing it.

Every experiment log sheet contains:

1) Experiment description, experiment type, supplies provided, and supplies needed
2) Experiment instructions
3) Observation questions
4) Experiment notes

So, pick out some experiments, find something that looks like fun, and go for it!

SCIENCE EXPERIMENT CATEGORIES

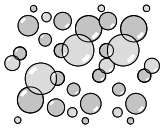
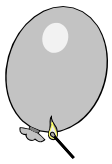
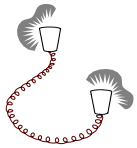
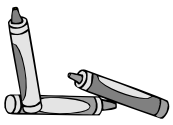
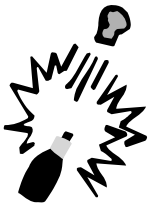
Below is a list of categories for each experiment.
It will also tell you if the experiment can be done inside our outside.

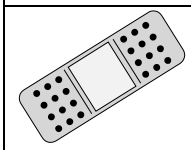
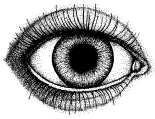
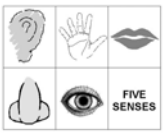
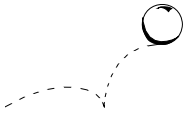
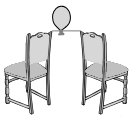
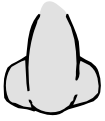
	INSIDE OR OUTSIDE	CHEMISTRY	HUMAN BODY	GENERAL SCIENCE
1. Antifreeze	IN	X		
2. Big Bubbles	OUT	X		
3. Blob	IN	X		
4. Burning Balloons	OUT	X		
5. Calling Long Distance	IN or OUT		X	
6. Chemical Reaction	IN or OUT	X		
7. Color Confusion	IN		X	
8. Copper Attraction	IN	X		
9. Cork It	OUT	X		
10. Crayon Creations	OUT	X		
11. Dancing Peanuts	IN	X		
12. Effects of Light	IN		X	
13. Eye Parts	IN		X	
14. Finger the Culprit	IN or OUT		X	
15. Five Senses Game	IN		X	
16. Ping Pong Pop	IN or OUT			X
17. Rocket Reaction	IN or OUT			X
18. Sensitivity	IN		X	
19. Siphon It	IN or OUT			X
20. Smelly	IN		X	
21. Sparky Sparker	IN			X
22. Spinning Around	IN			X
23. Static Electricity	IN			X
24. Static Roller	IN			X
25. Taste Test	IN		X	
		10	8	7

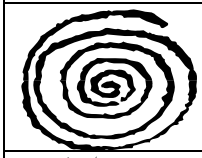
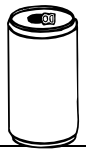
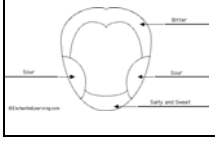
We color-coded the cardstock used for the experiment logs, to make it easy when filling the experiment kits. ***Chemistry*** experiment logs are printed on **TAN** cardstock, ***Human Body*** experiment logs are printed on **ORANGE** cardstock, and ***General Science*** experiment logs are printed on **YELLOW** colored cardstock. Color-coding the experiment logs make it easy to file them in the student's science binder.

EXPERIMENTS AT A GLANCE

Below is a list of the experiments in alphabetical order. We included a description of each experiment, area of science, and general supplies needed. Please note that ALL the experiments below require a copied experiment log and answer sheet. Some of them, but not all, have some master graphics that will need to be copied.

	**1. Antifreeze** **Area of Science**: Chemistry **Description:** Learn how salt makes it harder for water to freeze. **General Supplies Needed:** paper cups, salt, plastic spoon, sandwich bag, copies
	**2. Big Bubbles** **Area of Science**: Chemistry **Description:** Make your own bubble frame and make some big bubbles! **General Supplies Needed:** kite string, straw, pie tin, plastic cup, copies
	**3. Blob** **Area of Science**: Chemistry **Description:** Learn how to make plastic strong and moldable, and discover how molecules move. **General Supplies Needed:** borax, paper cups, craft sticks, snack bags, copies
	**4. Burning Balloons** **Area of Science**: Chemistry **Description:** Find out how you can hold a flame directly under a balloon and not pop it! **General Supplies Needed:** balloons, copies
	**5. Calling Long Distance** **Area of Science**: Human Body **Description:** Making homemade phones to learn about sound waves and how sound travels. **General Supplies Needed:** plastic cups, string, paper clips, copies
	**6. Chemical Reaction** **Area of Science**: Chemistry **Description:** Learn how to test if something is an acid or a base using cabbage juice. **General Supplies Needed:** baking soda, sandwich bags, coffee filters, wax paper, paper cups, copies
	**7. Color Confusion** **Area of Science**: Human Body **Description:** This experiment will try to trick your brain. **General Supplies Needed:** crayons, copies
	**8. Copper Attraction** **Area of Science**: Chemistry **Description:** How can you clean a dirty, old penny and make it look new? **General Supplies Needed:** dirty pennies, cups, salt, steel nail, paper towel, copies
	**9. Cork It** **Area of Science**: Chemistry **Description:** Explain how mixing vinegar and baking soda can cause enough pressure to pop a cork. **General Supplies Needed:** empty water bottle, baking soda, tissue paper, cork, copies, plastic sandwich bags

	**10. Crayon Creations** **Area of Science**: Chemistry **Description:** How heat changes a solid to a liquid, and then by cooling the liquid, how it changes back into a solid. **General Supplies Needed:** wax paper, aluminum foil, broken crayons, string, copies
	**11. Dancing Peanuts** **Area of Science**: Chemistry **Description:** What happens when you add peanuts to baking soda and vinegar? **General Supplies Needed:** baking soda, plastic sandwich bags, peanuts, copies
	**12. Effects of Light** **Area of Science**: Human Body **Description:** Learn what effects light can have on your skin color. **General Supplies Needed:** band aid, copies
	**13. Eye Parts** **Area of Science**: Human Body **Description:** Learn all about the parts of your eye and their purposes. **General Supplies Needed:** copies
	**14. Finger the Culprit** **Area of Science**: Human Body **Description:** Learn how to collect and match fingerprints. **General Supplies Needed:** baby powder, paint brush, black paper, sandwich bag, copies
	**15. Five Senses Game** **Area of Science**: Human Body **Description:** This is a game that will help you tune in to your senses. **General Supplies Needed:** contact paper, copies, cardstock
	**16. Ping Pong Pop** **Area of Science**: General Science **Description:** Use your breath to play a game. **General Supplies Needed:** ping pong ball, plastic cup, copies
	**17. Rocket Reaction** **Area of Science**: General Science **Description:** Learn how unbalanced forces produce motion. **General Supplies Needed:** straw, string, balloons, copies
	**18. Sensitivity** **Area of Science**: Human Body **Description:** Discover the areas of your body that have all different levels of sensitivity. **General Supplies Needed:** wooden toothpick, blindfold, copies
	**19. Siphon It** **Area of Science**: General Science **Description:** Learn how a siphon works. **General Supplies Needed:** plastic cups, plastic tubing, copies
	**20. Smelly** **Area of Science**: Human Body **Description:** Identify substances by smell. **General Supplies Needed:** film canisters, stickers, copies

	**21. Sparky Sparker** **Area of Science**: General Science **Description:** Make your own tiny lightening by learning about electrons and how they spark. **General Supplies Needed:** stryofoam, pie tins, copies
	**22. Spinning Around** **Area of Science**: General Science **Description:** How can heat make a spiral turn? **General Supplies Needed:** paper plate, pencil, copies
	**23. Static Electricity** **Area of Science**: General Science **Description:** How can electrically charged objects attract or repel things around them? **General Supplies Needed:** paper, ping pong ball, nylon comb, copies
	**24. Static Roller** **Area of Science**: General Science **Description**: Watch a soda can race across the floor by using static electricity. **General Supplies Needed:** clean and empty soda can, balloon, copies
	**25. Taste Test** **Area of Science**: Human Body **Description:** Where do I taste different flavors on my tongue? **General Supplies Needed:** cups, straw, tea bag, sugar, salt, sandwich bags, copies