



The Scientific Method

Summer's coming to a close and like other homeschoolers we are developing our plan for this school year. Instead of a science experiment this time, I thought now would be a good time to review the basic, yet necessary ingredients that are often missing from homeschool science.

Most homeschoolers believe that if they cover content, things like what's in the books, information, do a demonstration, that they've covered science. But the other half of the equation is a set of skills that must be mastered. One of those skills is learning to perform the steps of an experiment. When I say steps here, I'm not talking about the directions or procedure, but the scientific method. Many homeschoolers do a demonstration and call it an experiment. Or they'll do an experiment and say "oo, wow!" and be done with it. But what we need to do is an experiment where we test something, making a hypothesis and then take measurements and data. We analyze the data and graph the results. Finally we write up our conclusion as to whether or not our hypothesis tested true. THOSE are the steps. So here's an activity where the main concern is learning to use the scientific method, not necessarily what you're testing.

Testing suds ability of dish soaps (expensive to store brands)

First, guess at which ones will have higher suds levels.

Perform test of each soap, one at a time:

Use empty single serving sized soda bottles (all the same size)

Measure equal drops of each soap into it's own soda bottle

Measure 2 cups water into each bottle.

Now shake for equal amounts of time, for all bottles.

Measure height of suds at end of shaking and again after 1 minute for each.

Record findings.

There are many ways to analyze this data, talking about hardness of water, shaking time, height of suds, given more time, how many suds remain, etc. The important thing is that our children are learning the "science" in science. Here's the steps again:

Hypothesize what you think the results will be

Perform the test with accuracy, taking care to do the same to all items so you can rule out variables that will ruin your results.

Take data/measurements

Analyze data/ graph results

Discuss/conclusions/what-if's

Once our babies get a good idea of how experimentation works, we can move on to more advanced experiments. Of course these skills also transfer across the curriculum into math skills and writing skills as well.

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