

# Homeschooling: The Best Way to Teach Science

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## Qualifications

- University Professor From 1990 - 1995
- As a university professor, helped develop Indiana's Only Residential High School for Gifted and Talented Students
- NSF-Sponsored Scientist with More Than \$200,000 In Research Grants
- Became Interested in Homeschooling Because of Excellent University Students Who Were Homeschooled
- Currently writes homeschooling courses and is an adjunct professor at Anderson University

## Why is Homeschooling the Best Way to Teach Science?

### 1. Your child gets to learn science for the right reason.

“Nature has some perfections to show that she is the image of God...and some defects to show that she is only His image.” -Blaise Pascal

“I saw the infinite, all-knowing and all-powerful God from behind...I followed His footsteps over nature's fields and saw everywhere an eternal wisdom and power, an inscrutable perfection.” -Carolus Linnaeus

“The significance and joy in my science comes in the occasional moments of discovering something new and saying to myself, ‘So that's how God did it!’ My goal is to understand a little corner of God's plan.” -Henry F. Schaefer, III

“But now ask the beasts, and let them teach you; And the birds of the heavens, and let them tell you. Or speak to the earth, and let it teach you; And let the fish of the sea declare to you. Who among all these does not know That the hand of the LORD has done this, In whose hand is the life of every living thing, And the breath of all mankind?”

Job 12:7-10

### 2. Your child's scientific education is bounded only by his or her interest and talent!

“Students in science class diligently memorize human cell components like DNA, mitochondria and endoplasmic reticulum...And — most disturbingly, say a growing number of scientists — they learn to hate science.”

“Real science is exciting. It's completely different from these textbooks.” -Chron.com

In a study of homeschooled families in the U.S., J. Hornick showed that the parents did not teach science to their teenagers: **the teenagers taught themselves**. The result was “inquiry science of the very highest quality.” The students performed as real scientists. They explored scientific issues, made hypotheses,

did experiments, and analyzed results. Compare this to the “memorize/regurgitate” science found in schools

### **Brandon Brown - An illustration of this point**

- ↳ By the time he was 16, he had decided to be a politician. He did well in science but did not like it.
- ↳ Then his mother made him study a chemistry course.
- ↳ He mostly learned it himself with the help of friends and found it incredibly interesting, so then he studied physics in the same way.
- ↳ He liked the physics course so much, he decided that he liked science.
- ↳ He decided to go to university and study chemistry.
- ↳ He graduated with a chemistry degree and went to medical school.
- ↳ He is now a medical doctor and is a published author in bioethics.
- ↳ His father is an accountant, and his mother never went to university

### **3. Your child will be better prepared for and more likely to succeed at the university level.**

#### My Experiences With Homeschool Graduates

- ↳ They were more inquisitive.
- ↳ They were much more willing to work on a problem/situation they hadn't been explicitly taught about.
- ↳ They were more willing to ask questions.
- ↳ They were interested in going beyond the class material.

When asked about their experience with homeschooled students, Canadian universities said:

- ↳ They have performed well at the university level.
- ↳ They are often over-achieving.
- ↳ They have lots of parental support.
- ↳ Generally, they are more independent and require less assistance.
- ↳ Homeschool graduates registered at the University of Toronto have achieved GPA's ranging from 2.74 to 3.96 out of 4.00. The university average is 2.2.

| <b>Institution</b> | <b>HS Grad GPA</b> | <b>Everyone Else</b> |
|--------------------|--------------------|----------------------|
| Boston University: | 3.30               | 2.90                 |
| Baylor University: | 3.36               | 3.04                 |
| York Technical:    | 2.99               | 2.67                 |

Stanford admissions officer Jonathan Reider says:

“The distinguishing factor is intellectual vitality. [Homeschooled] kids have it, and everything they do is responding to it.”

#### 4. Your child will learn more science.

- ⌘ In the ACT, homeschooled students score 21.9 in science compared to the 21.1 overall average. That's about 10 percentage points higher using the ACT scale.
- ⌘ Several large studies in individual states and Canada indicate that homeschooled high school students score between 68 to 88 percent on standardized science tests, compared to 50% for publicly-schooled students.

#### 5. Your child will get to learn real science

##### Symbiosis of the clownfish and the sea anemone

The sea anemone's sting paralyzes fish, EXCEPT for the clownfish. These stingers work with a sophisticated chemical detection system. Since the clownfish masks the one amino acid detected by the stingers, it can swim freely in them. This provides protection for the clownfish and lures other fish into the sea anemone for food.

##### Symbiosis of ants and trees

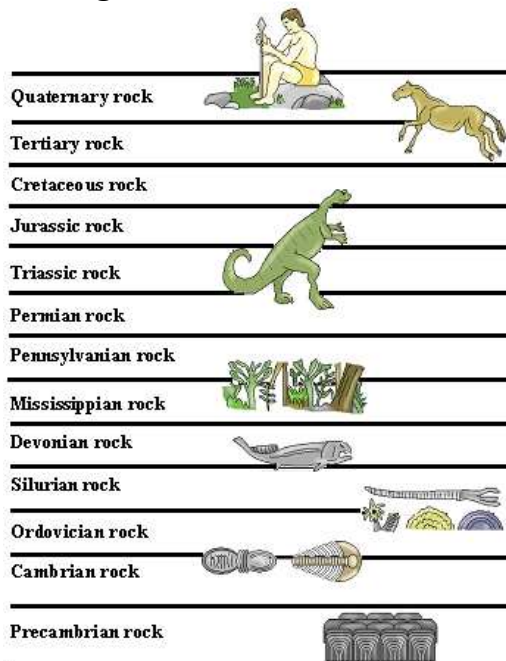
*Crematogaster* ants live on *Acacia* trees. The trees provide them with food and shelter, and the soldier ants attack any intruders. The tree's flowers release ANT REPELLANT so the tree can still reproduce.

When humans tried to "protect" *Acacia* trees from large herbivores, the trees became SICKLY because they stopped putting resources into this relationship.

"Symbiosis is the most relevant and enduring theme in the history of our planet."

– Dr. George D. Stanley, Jr. *Science* 312:857 (2006)

##### The Geological Column



This is presented as absolutely real in schools and textbooks. However, it is an artificial construct, and I don't know a single school textbook that explains this fact or how the construction is made.

We know the Geological Column is not real:

"As a matter of fact, *nowhere* on the planet are there found sequences of fossils in the order invertebrates-vertebrates-fish-amphibians-reptiles-mammals (from deep to superficial) in contiguous layers of sedimentary rocks representing different ages of the Earth." -Dr. Vj Sodera

Worse yet, we have known for quite some time that most of the bottom layers are absolutely not correct!

In 1909, Charles Walcott was on a fossil dig. As the director of the Smithsonian, he was well-versed in evolution and a fervent believer.

He was digging in Cambrian rock, which is supposedly 550 million years old. He was surprised to see complex fossils in this rock

He found representatives from *every* major animal phylum. This means he found every basic body plan of living organisms in this “ancient” rock.

These Fossils Presented Two Problems:

1. The “geological column” was considered gospel truth. These fossils showed it to be wrong!
2. There was no way “simple” invertebrates could have evolved into the myriad of body plans he found in just a few tens of millions of years

Walcott’s Fossils, **60,000 in all**, demonstrate what evolutionists call the “**Cambrian Explosion.**” It is a mystery in evolution.

“Authors of high school textbooks and even introductory courses in biology still ignore these data. In the college classes I teach, I regularly encounter students who are being taught the tale of invertebrates gradually evolving into vertebrates. At \$15,000 per year tuition, that’s an expensive error.” -Dr. Gerald L. Schroeder

### **More Data Students Don’t Learn About in School**

Stratified sediments that formed in 5 HOURS.

School textbooks tell you that the ONLY way sediments can form layers is if they are deposited over millions of years.

Canyon formed in a day

School textbooks say that the only way canyons form is for rivers to slowly erode them over millions of years.

### **One Reason This is Important**

An article in the journal *Science* reviewed 18 studies that evaluated the effectiveness of three kinds of learning activities: (1) ones that involved argumentation, (2) ones that involved a group working together to make a single product, and (3) ones involving experimentation.

One study indicates it is still the most effective, even when some of the ideas being debated are *known to be incorrect!*

(Jonathan Osborne, “Arguing to Learn in Science: The Role of Collaborative, Critical Discourse,” *Science* **328**:464, 2010)