

# Science Lesson #13

## *The Woods are on Fire!*

(Carbon versus Metals)

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### Introduction to Fables and Science

#### Today's Lesson

Let's face it, we use our heads more than our hearts. In teaching science, in teaching other subjects and in life, our modern times have persuaded us to analyze everything from our heads too much! We get lost in the details of life and don't step back enough to see how great life is. Today, let's practice stepping back. For instance, if you step back and think about it, you realize that ***the woods are on fire!*** I'm John Bickart and this is the Fables & Science series, where I mix inspiring stories that build character with hard science that builds critical thinking. For today's lesson, you might want to check out fable #40 from [bickart.org](http://bickart.org).

First, let me show you how the woods are on fire ... I live in the woods. But these are no ordinary woods. Let's look at three maps and learn how to step back: a waterfalls map, a rock map of mountains, and a map of nature's elements (I think you call it The Periodic Table). Here is a waterfalls map of the same area that shows 300 main waterfalls and 900 minor ones. Here is my rock map that encompasses about a one-hour radius of Asheville, NC. It has a rock I brought from some of my favorite hikes. We are standing in the Appalachian Mountains - perhaps the oldest mountains on the earth, the grandfathers and grandmothers of earth, if you will. Over there is Great Smoky Mountain National Park, the most traveled national park in the country (12.5 million visitors in 2019). Over there is Mount Mitchell; the highest mountain east of the Mississippi River. About three miles down the hill is the French Broad River, considered the 4th oldest river in the world, only predated by the Nile, The Colorado and The Susquehanna Rivers. These woods, in this one-hour radius, are really cool, with the largest Spruce fir stand in the world and the

most biodiverse northern hardwoods growing at elevations above 4000 feet in America.

So, let's get onto how the woods are on fire. To do that, check out the periodic table. But step back and see it as a whole - don't get lost in all of those details every time you see it. Step way back.

### **The Periodic Table of Elements**

Take a look at the periodic table. If you step back to see the whole table, what do you see as a very common type of element? Metals! 95 of the 118 elements are metals! So where are the metals? I see trees and plants and dirt and rocks. But, where are the metals? And as long as we are looking for missing things, where are the leaves from last year and the year before that? And how about the plants and flowers and twigs and walnuts??? Why isn't there an accumulation of all of the leaves that fall. There should be a tremendously thick layer!

### **Demonstration that The Woods (and the whole earth, including you) is on Fire!**

***Burn leaves.*** Where do they go? Leaves, wood, candles, carbohydrates (all plant food) are all carbon based and return to carbon dioxide when burned. They become air. So, the woods go to air.

***Burn metals.*** Where do they go? Nowhere. They drink in oxygen and stay right here. In fact, they get heavier as they turn to their rock form. So, the earth goes to rock.

[\[Play video here to see live demonstration.\]](#)

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## **Here is a provocative thought that you will find in Fable #40**

Have you heard of homeopathy? It is a belief that the human body can cure itself by introducing a very small amount of a substance as a type of medicine. Sometimes you introduce a bit of the substance that caused the problem. Some believe that using a very, very small amount of say iron, to your body can let the iron work better than giving your body a large or even medium amount of iron. Even if this homeopathic belief of using ‘same to treat same’ is true, how could very small amounts of a anything be helpful? I see it this way. First, there is a balance to everything. Too much of a good thing can be harmful, so maybe the right amount of iron could be a tiny amount. Second, remember how I said that much more of nature may be alive than we have thought (since ancient times)? Well, maybe the ***iron is alive!*** Therefore, it just might be, that the iron - or whatever substance is introduced in tiny amounts - is a living being that has powers that work better if given room to do so? Like a very small glimpse of someone or something very beautiful is sometimes more alluring than a full view, maybe ***less can be more*** in nature. Fable #40 below suggests this.

Here are some fables that deal with this: [\[Fable #18\]](#) [\[Fable #40\]](#) [\[Fable #79\]](#) [\[Fable #122\]](#) [\[Fable #130\]](#) (Bickart, 2020a, Volume 1; 2020b, Volume 2; 2020c, Volume 3). Here is a fable that alludes to homeopathic beliefs.

## #40 *The Secret of the Rock*



*A giant redwood tree took a substantial drink of mineral water that had passed over his friend, a wise old red-rock. "Ahhhh, I needed that iron," he said gratefully to the rock. "More and less - more and less," replied the rock. "Pardon me?" queried the redwood. "It's my secret," answered the rock, enigmatically, "I love to feed you more water and less iron. It's my secret formula!" "Being one of the largest trees on earth, I know something of MORE; but you arouse my curiosity as to what you call more and less? Every day, I breathe volumes of air and drink casks of water. In a thousand years I grow hundreds of feet. Yes, I am familiar with MORE. But my good friend, you have now stirred my interest in LESS." The rock smiled, then answered, "When I make your soil, I mix so little iron in oh-so much water. By the end of your life, I find almost all of my iron still there in the soil!" The redwood looked surprised and quickly asked, "But why LESS iron - why not MORE?" The rock paused, then whispered so loudly he might as well have been shouting, "You see, **THE SECRET OF THE ROCK IS THAT MY MINERALS ARE LIKE EAGLES!** They are active, alive, and love to spread their wings! So, giving them plenty of room in the water makes them strong and lets them soar."*

**SOMETIMES LESS IS MORE**

# *The Secret of the Rock*

## Why Use Fables to Teach Science?

### **Conversation Starters**

- What are some of your favorite snacks?
- Do you read the labels on food packaging?
- Are you aware of the minerals you are eating? Did you know that minerals are rocks and metals? Do you think plants and trees need minerals?
- What are some trees that you like? Why do you like them?
- Do you ever climb trees? Did you ever wonder how they keep their arms (branches) up? Do you think that minerals have something to do with a tree's strength?
- What do you think it meant in the story, when the rock said, *“THE SECRET OF THE ROCK IS THAT MY MINERALS ARE LIKE EAGLES”*?
- Do you have favorite foods that are great in small quantities, but not so good in larger amounts? Does that bring to mind other things that have a ‘balance amount’ - just the right amount - more is not better?

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References

- Bickart, J. (2020a). *Bickart's Just-in-Time Fables (Volume 1)* (Vol. 1). Asheville, NC: Red Shirt Interactive Group.
- Bickart, J. (2020b). *Bickart's Just-in-Time Fables (Volume 2)* (Vol. 2). Asheville, NC: Red Shirt Interactive Group.
- Bickart, J. (2020c). *Bickart's Just-in-Time Fables (Volume 3)* (Vol. 3). Asheville, NC: Red Shirt Interactive Group.