

# Fractal Energy Trading Crypto MasterClass

## Module Two What Are Fractals?

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## **What Are Fractals?**

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# Introduction to Fractals

What is this “Fractal” term that I’ve been bringing up again and again? Well, let’s get that out of the way right from the top. A quick search of the term gives us this result:

*“A fractal is a natural phenomenon or a mathematical set that exhibits a repeating pattern that displays at every scale. If the replication is exactly the same at every scale, it is called a self-similar pattern. Fractals can also be nearly the same at different levels.....Fractals also includes the idea of a detailed pattern that repeats itself.....The feature of "self-similarity", for instance, is easily understood by analogy to zooming in with a lens or other device that zooms in on digital images to uncover finer, previously invisible, new structure. If this is done on fractals, however, no new detail appears; nothing changes and the same pattern repeats over and over, or for some fractals, nearly the same pattern reappears over and over.”<sup>1</sup>*

I really didn’t gravitate towards theory in school, preferring the applied world...so let me “apply” this mathematical verbiage to a couple of principles that we’ll be using for the rest of this program:

- **Larger things are created from smaller, identical things.**
- **Change to these larger things starts with the smaller things first.**

These are two principles that most of us can immediately recognize from our daily travels and experiences. Let’s dive into these for a second, because I want you to understand how much you already know about these concepts...and then I’ll show how this whole “Fractal” concept applies to Financial Markets.

And then we’ll show how to make money with Fractals. But first, a little background...

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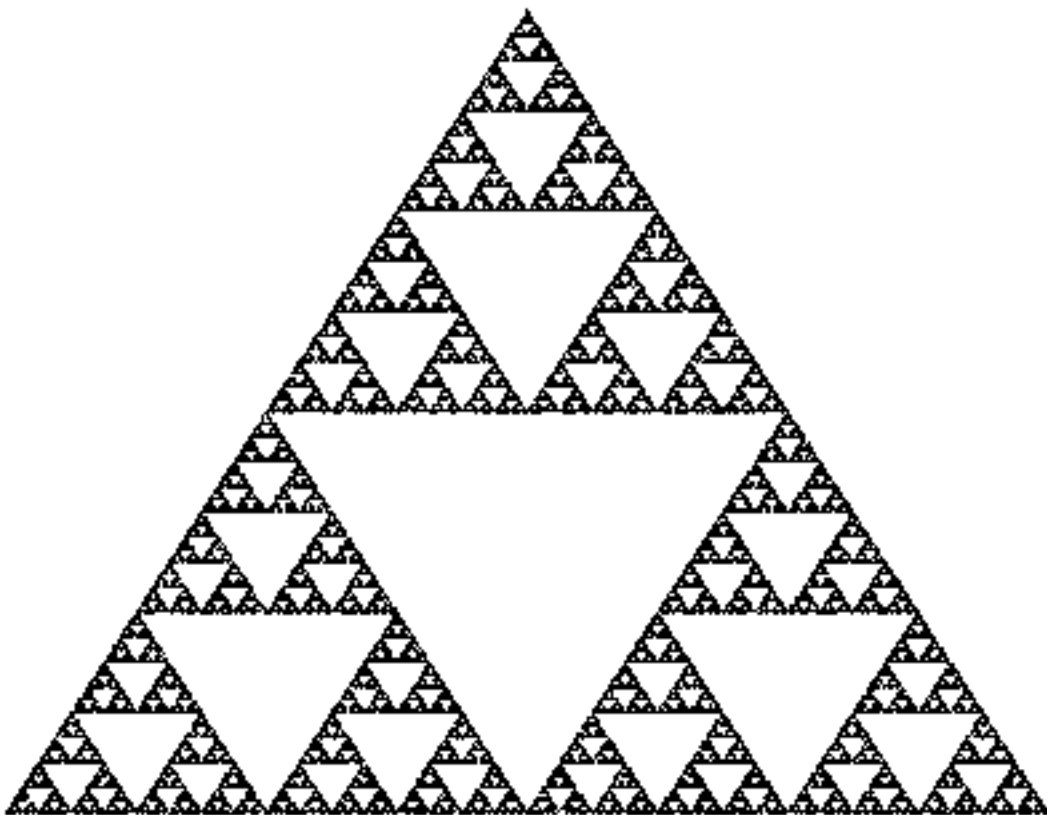
<sup>1</sup> <http://en.wikipedia.org/wiki/Fractal>

## Larger Things are Made Up From a Collection of Identical Smaller Things

Have you watched the video for this module? This might be an excellent time to do so, because I'd like to save you a lot of time, paper, and inkjet cartridges which would be required if I showed a similar number of relationship examples in this text. The video is quite short, and worth the time to watch to save a couple of bucks and some trees.

<pause>

I probably put too many examples in the video to show how “larger things are made up from a collection of identical smaller things”, but the key point is that I really want you to see how many of these Fractal relationships that you see in your daily life, and how much this relationship of larger/smaller things you already recognize.



This concept of “self-similarity” can be seen in this illustration of a triangle; if you blur your focus of this diagram, you’ll just see a larger triangle. Zoom in, and you’ll start to see an almost infinite series of triangles, which replicate themselves in the fractal nature to build the “larger” triangle.

Even you and I, when looked at from a distance with the human eye, appear as a human body. If we zoom in, we'll see that we're a collection of cells, mostly identical cells in groups. Zooming in further would show the molecular structure based on the function of that cell.

What I'd like to encourage you to do, starting today, is to really open your eyes to all of the Fractal relationships that are around you in every day life. Perhaps you have a theoretical mathematical background, in which case this is old news for you. For the rest of us, myself included, this was somewhat of a startling revelation to me as I started to piece together how much financial markets resembled all of the fractal structure that I was surrounded by in every day life.

## To Know the Health of Something, Look Inside

I think that most of us have heard the expression “*change comes from within.*” Most of the time that phrase is meant to allude to our outlook on life, or our awareness and beliefs. No one can change your mind in an instant, changing a belief is a process that the mind works on and turns over, comparing it to your current belief system...before change can occur.

But many other changes come “from within.” Think about your health for a minute...the last time you got the flu, it might have seemed like it occurred instantly, but it did not. One single virus might have started it, finding a host cell and then replicating itself... and then those viruses went on to find their own host cells, creating at an exponential rate. There was literally a war going on inside your body for some length of time against a replicating virus before your immune system waved the white flag and croaked out a terse “help!” Change started one cell at a time until the tipping point was reached, and you feel like you’ve been beat up by a 2-by-4.

A more extreme example is cancer; abnormal cell replication occurs on a small, almost undetectable level for a long time, possibly years. You’re none the wiser, until it begins to metastasize elsewhere in your body and affect organ function. Only now do you begin to be aware of the changes in how you feel, and you’re in trouble.

In the video I used the example of a castle, which looks perfect from a distance. Only when you zoom in on the individual bricks & stones would you know the shape of that structure. A single disintegrating stone can shift the loads and cause massive stress in ways that the rest of the stones were not expected to carry.

A pothole in the road starts as a very small pit in the road surface, which is enlarged over time through daily wear and expansion/contraction forces, especially through the effects of water & ice. What started as a very small hole soon becomes a tire-wrecking hole as the cumulative effects of lots of small changes leads to something much larger.

Change starts at the smallest levels first, and propagates upwards in scale through this chain-reaction effect.

## How Does This Apply to Financial Markets?

Hopefully, you can see where I've been going with this line of thinking; I would like you to start thinking of financial markets as a "structure" or an "organism." I'd like you to think of financial markets as living, breathing entities...after all, they are comprised of millions of active traders, no different than "cells." As you go through this program, you'll see how the laws of physics appear suited to financial markets as well.

What I'm asking you to do is to start looking at financial markets through the same lens that you look at everything in your daily life. One of the first things that we learn about analyzing markets is to turn off our intuition and to hand over responsibility to unknown "indicators." We learn to disconnect everything that we know about how things "work," thinking that we cannot use our life experiences to evaluate markets.

What we'll find is that markets are Fractal in timeframe or transaction....larger timeframe charts are built up from many smaller-timeframe charts. The concept of self-similarity is evident, as larger timeframe charts look like larger replications of smaller timeframe charts. Most traders don't really know why they are looking at a particular timeframe of chart...is a 120 minute chart better than a 60 minute chart, or should you use a 30 minute chart? What we'll show is that there is a relationship amongst the different charts, whether "timeframe" or "range" or "tick."

And we'll also find that financial markets change "from within." Changes occur very infrequently on larger timeframe charts, almost imperceptibly. Most traders lose perspective on any change, panicking on the first daily candle to the downside, not seeing how that move fits into a larger pattern or rhythm. And most of us don't see changes in trend occurring until it's almost too late, and the move is "over."

Look, trading on the "hard right edge" of the chart is difficult. I'm not here to say that it's easy...but what I am saying is that there are relationships that we've been ignoring, because most of us really don't know what to look for on charts, instead assigning heavy responsibility to trailing indicators like moving averages or other studies that look good on charts.

If you really apply what I'm talking about in these first few modules of the program, you'll start to see the underlying STRUCTURE that works in any timeframe, laws of the universe that work regardless of what organism that we're evaluating. You'll start to see the reason behind the move, instead of just emotionally reacting to the move like everyone else.

There's no doubt that this will require a little work to get there, but I need to lay the groundwork first to show you how much you already know.



## Summary - What are Fractals?

There are two main concepts that we brought up in this module:

### Larger Things are Made Up of Identical Smaller Things

There are myriad Fractal relationships around us, where a larger entity is really built up from numerous, identical, smaller things. As we'll see, financial markets are Fractal as well.

### Change Comes From Within

We typically don't see larger entities change until it's obvious...and usually when it's too late. Zooming in on the smaller components that band together to form this larger "thing" will show us these early warning signs, because if the smaller "things" are changing, eventually these will propagate to the larger "thing", and the change will be much more dramatic. Similar to the previous point, we'll find that this principle is front and center regarding change in financial markets.

In the next module, we'll apply these principles directly to financial markets.

## Homework and Next Steps

Please complete the following tasks before moving to the next module:

- ☐ Watch the associated video for this module.
- ☐ Start to look around you and note all of the myriad Fractal relationships around you, ones that you take for granted every day.
- ☐ Think about the technical analysis system that you're using today. Does it really tell you what is happening to the underlying market, or is it just telling you what has already happened?