The fundamentals of nature are both discrete and continuous. Quantum mechanics provide the guiding principle to matter and radiation. Although the theory describes mass-energy in discrete quanta, it can also use wave functions which are probability equations. Particles can be described as a field and a field into a particle. Matter is seen in our macroscopic world as solid and defined. We see electrons, protons, and neutrons to name a few. These particles are taken together to make up the objects in our universe. However, we need to include the forces of nature to understand the behavior of matter. These forces are described by field equations. So, now we have particles and forces that are explained by quantum mechanics. Yet, this theory doesn't explain spacetime very well.

Spacetime is described as having three spatial dimensions with one temporal dimension. There is some evidence that it by itself contains some form of energy, called the cosmological constant. It was conjured up by Albert Einstein to keep the Universe from collapsing in on itself too quickly. His General Theory of Relativity describes objects that are accelerating while is Special Theory of Relativity describes objects in constant motion. General Relativity also determines how spacetime originated and how it will behave. It is described as a continuum.

One thing needs to be addressed before one can proceed. It is the meaning of the "flow of time". According to the fundamentals of physics, nothing corresponds to the passage of time. The laws contain a time variable, but fails to differentiate between past and future. As the equations are simplified, the time variable disappears. Special relativity denies any special significance to the present, simultaneity is relative. The universe should be at a standstill. This is the problem of frozen time. This arises when one tries to turn general theory of relativity into a quantum theory using a procedure called canonical quantization. General covariance states that the laws of physics are the same for all observers. Two observers will perceive spacetime to have two different shapes. One sees a "donut" the other sees a "coffee cup". Each is a smoothly warped version of the other. General covariance dictates that the difference cannot be meaningful.

Does spacetime exist independently of matter? If the continuum is a separate entity, general relativity must be indeterministic, quantum theory. If general relativity is deterministic, spacetime is fiction. Space may morph over time, but its shapes are all equivalent. If spacetime has no fixed meaning, how can you make observations at specific places and moments.

Quantum gravity requires Planck time. String theory requires Planck length. Space cannot accommodate an infinite amount of detail. As you enlarge an object it boundaries begin to blur. Observations in the Cosmic Microwave Background should reveal this. "Airy disks" occur when the photons from a luminous object are in phase.

By reckoning each piece of the puzzle can we find the Theory of Everything.