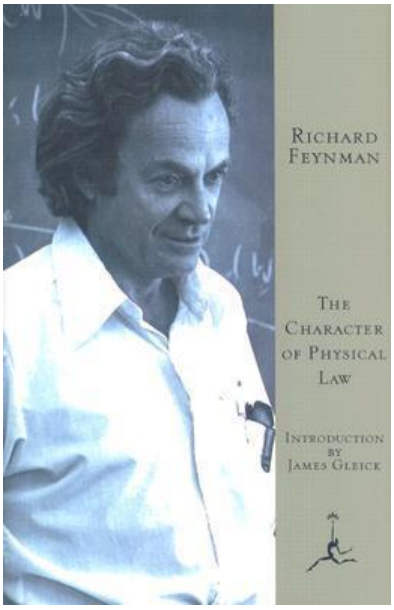
From the Planners' Bookshelf...

Classical Learning Systems.

In *The Character of Physical Law,* **Richard Feynman explains the main differences in the traditions of how mathematical reasoning is employed between mathematicians and physicists.**

Video Link [10:19]: https://www.youtube.com/watch?v=YaUlqXRPMmY



From CT.org…Being a student of learning, and a beginner at that, I find the ways that learning has been taught over the centuries to be fascinating. Reading *The Character of Physical Law* by Richard Feynman revealed two ways that were contrasting and useful. From the first part of the video, Feynman describes the two systems. Don't shrink from the word "physics"; allied professions offer much.

From Feynman [who speaks in English]…
Babylonian..."In Babylonian schools in mathematics, the students would learn something by doing a large number of examples until he caught on to the general rule. Also, he would know a large amount of geometry, a lot of the properties of circles, the theorem of Pythagoras, formula for the areas of cubes and triangle; in addition, some degree of argument was available to go from one thing to another. Tables of numerical quantities were available so they could solve elaborate equations. Everything was prepared for calculating things out."

"But Euclid **[the Greeks]** discovered that there was a way in which all of the theorems of geometry could be ordered from a set of axioms that were particularly simple. The Babylonians knew all the details but could never come up with fundamental axioms. In physics, Feynman says, we need the Babylonian method." Don't start with axioms and then fit the data to the axiom; look at the information available and discover axioms; i.e., don't start with pre-conceived notions. City planners knows this.

Source: *The Character of Physical Law* by Richard Feynman, first published by the British Broadcasting Company in 1965, Massachusetts Institute of Technology in 1967, the Modern Library in 1994.
LINK: https://www.goodreads.com/en/book/show/291920.The_Character_of_Physical_Law

Richard Phillips Feynman [1918-1988] was an American theoretical physicist, known for his work in the path integral formulation of quantum mechanics, the theory of quantum electrodynamics, the physics of the superfluidity of supercooled liquid helium, as well as his work in particle physics for which he proposed the parton model. For contributions to the development of quantum electrodynamics, Feynman received the Nobel Prize in Physics in 1965 jointly with Julian Schwinger and Shin'ichirō Tomonaga…Wikipedia