

Having Fun With Math No. 1

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I just now realized this, in mind, to work with the fundamentals of math, in a dimension way. See where I end up, and why math doesn't have to be dry, rote, remote, and tedious:

Blue marble.

Another instance of blue marble.

Math

blue marble – 1, “blue marble 1”

another blue marble – 2, “blue marble 2”

numbers

{blue marble, another blue marble}

{1, 2}

sets

and this introduces the arabic numerals.

Another blue marble – 3, “blue marble 3”

{blue marble, another blue marble, another blue marble}

repeatable

{blue marble, another blue marble, another blue marble, ...}

infinity

blue marble is a sphere – with its surface always at a radius r of R , from a point P . Its surface is continuous, it has an area; and there are an infinite number of radii line-segment length R from point P to its surface (this is one way to view its surface: space is infinite in inner-extent).

In this situation:

repeatable

{blue marble, another blue marble, another blue marble, ...}

infinity

it can be said,

{blue marble which is situation A, another blue marble yielding situation B, another blue marble with respect to situation B yielding situation C, another blue marble with respect to situation C yielding situation D... }

infinity

situation

world-space

thought
perception
wisdom

thought-relational
philosophic-relational
social-relational
world-space
meaning

{1, 2, 3, 4, ... }
numbers
set
infinity
the integers

then add combinatorics:
blue marble, yellow marble, green marble

... and how it leads to 'situation', which a child can pick up. "Just this world before one, in this way."

Infinity: does it actually exist, the child might ask; or is it limited by how many marbles are in a material bag? Or is there conceptual or actual infinity? In the concrete, material world, in space, or in mathematics? On a computer? Is a surface infinity? In mathematics; in the concrete world?

Is a marble a pretty good sphere? And is a mathematical sphere abstract? Is the marble the fusion of the abstract (mathematical sphere) and the concrete (the material, glass)? What is an instance of?

The child – or someone else – might ask these types of questions!

I'll pursue this further.

Endnote

Marvin Minsky, in *Inventive Minds*, suggests that children can be introduced to topics in topology, group theory, and geometry. I'd add sets and combinatorics, then later probabilistics and statistics. Combinatorics and counting – and sets – is what the child often deals with, in everyday life: what a fun, interesting, dimension, explanatory, probing domain! Along with notions of discrete (integer-like) things and continuous (real number-like) things. One bucket. The arc of the hand. The shovel and some mud. (Carol, in *The Emotion Machine!*) – And I would include a discussion of the givens, including the fact that there are givens – and axioms and postulates – of a mathematical system!

I've relied on my own practice of Zen, *Foundations Of Geometry And The Non-Euclidean Plane* by George E. Martin (a few pointers and some basics), some basic notions of math including the magic of geometry and the point and line, an introduction to infinity-categories (quasi-categories) in Quanta Magazine online, Marvin Minsky's work, Nagarjuna's statement, "When we see the fusion of the abstract and the concrete, we see the real world, before us" (and his mindset, in *Fundamental Wisdom Of The Middle Way* (translated by Nishijima)), Smalltalk (the object-oriented computer programming language), and my reflections and MVO: 2019 Thesis on the psych unit (and what is omitted, including in mainstream psychiatry) – and reflection, real inquiry. In a way, I'm just beginning my inquiry, into mathematics.

I contrast this with the dry, rote, remote, mind-put-on-a-reified-arrow-of-linear-time learning of math from grade school on: without discovering its dimension and the types of background questions one might ask. Not all schools are like this. They should be looked to. There was more material in high school that I might have seen, with this type of approach, thru to Calculus. But to discover all these aspects to math, even as a novice – how cool, interesting, dimension, and fun!

To add, subtract, multiply, divide, take to the exponent, or count might then be what one does with abstract or concrete things. This should be integrated.