



Mathematics for Every Teacher with Jake Tawney

Lecture 1: Why Mathematics is Worth Knowing

Outline:

Why Mathematics is Worth Knowing

- Mathematics is true, good, and beautiful. What does this mean?

We study mathematics because it is good.

- Mathematical objects deserve to be studied for what they are.
 - In geometry triangles are perfectly marvelous on their own.
- Wonder is an active of the will. Wonder is a choice that we make.
 - Math is good, and as such it deserves to be wondered at.
- There is something unique in the human soul that can only be satisfied by thinking about mathematics.

We study mathematics because it is true.

- Math teaches students about objective truth.
- This is eternal, objective truth. The Pythagorean Theorem is not something that fades with time.
- Math deals with the realm of ideals, things that are infinitely large and infinitely small.
- There is objective truth in the universe. There is eternal, objective truth. Truth is not all material. Math teaches us that this kind of truth is knowable.
- Math is a mystery.
 - Mathematical truth in itself can never be conquered.
 - The more you know, the more you know that you don't know.
 - There are unsolved problems that are easy to state for 2nd graders.
- Mathematical truth is:
 - Objective
 - Eternal
 - Immaterial
 - Inexhaustible

For the mathematician, the beauty of mathematics need not be defended.

- There is the number pi, therefore mathematics is beautiful.
- Great beauty can come out of randomness in math. Math is beautiful because it is ordered, but it is so much more than that.
- Some solutions are better than other correct solutions because they are more elegant (generalizable).