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# Applied Mathematics

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## Source

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<http://www.math.unm.edu/~rhersh/Definition%20of%20mathematics.doc>

Applied mathematics uses whatever arguments and methods it can - analogy, special examples, numerical approximations, physical models - to learn about hurricanes, say, or epidemics. It is mathematical activity, to the extent that it makes use of mathematical concepts and results, which are, by definition, concepts and results capable of strict mathematical reasoning - rigorous proof. Mathematical activity or behavior includes: thinking, wondering, dreaming, learning about mathematics; solving math problems, at all levels, from pre-kindergarten up through postdocs and Fields Prize winners; and teaching mathematics, at all levels. (If it isn't, then we'd call it bad teaching.) It includes ordinary commercial calculations too, and routine plugging of numbers into formulas by engineers and technicians. And geometrical reasoning, and probabilistic reasoning, and combinatorial reasoning, and any formal logical reasoning. All the way back to the mathematical behavior of the Maya calendar makers, and the ancient Polynesian navigators.