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### Society

# Canonizing maths

**What should one really know about math? In the Netherlands several lists appeared answering similar questions on different fields. The Dutch newspaper ‘de Volkskrant’ started such a list on science. If you had to compile such a list for mathematics, what would you argue to be indispensable?**

Suppose you were asked to make a list of 50 topics (people/facts/phenomena) in mathematics and the natural sciences that every adult should know about. What would you choose? This question, always good for dynamic discussions at the coffee machine, became a reality on paper at the end of 2006 when a major Dutch newspaper *de Volkskrant* decided to publish such a list.

‘Cause for action’ was the creation of a similar list with topics from Dutch history, the so-called *Canon van Nederland*, instigated by the Dutch government to revive and standardize the teaching of history at primary schools. In addition to a lot of debate about the necessity of such a list, the *Canon van Nederland* became the source of a modest hype. Various web sites and magazines presented their own canons (lists of things they thought canonical) like the canon of Dutch 20th century movies, the canon of famous soccer play

ers and, most elaborate and glamorous of all, the ‘*de Volkskrant Bètacanon*’ of maths and natural sciences. The peculiar prefix ‘beta’ originates from an old Dutch school system, in which students had the choice to focus in their last two years of secondary education on languages (‘alpha’) or sciences (‘beta’). The system had already been abandoned in the 1960s but not before leaving deep traces in the language.

A group of eight renowned professors was formed to compose the list of 50 topics that would make up the canon of maths and natural sciences, and every Saturday in 2007 one of these topics, ranging from the Big Bang to the modern toilet system and from tectonic movement to the concept of error, would be revealed. In an 800 word text, written by ‘a young and enthusiastic researcher’, the subject and its role in modern science were explained in the newspaper. A longer version of

this text was presented on an accompanying website where, in the spirit of Wikipedia, the interested reader could make additions and corrections. Mathematics was represented by a modest number of five topics: algorithms, formulae, the normal distribution, chaos and, at the very start of the project, the number zero.

Of course one could wonder if after a year of reading informative and entertaining stories, the average Dutch newspaper reader does indeed know more about maths and science — and the answer would probably be no. However, the overwhelming number of enthusiastic responses, both on the website and in the daily lives of the authors, makes it clear that the lack of interest for science is not so widespread in Dutch society as is commonly believed. ←

#### The 50 de Volkskrant Bètacanon topics

##### *Mathematics*

The Number Zero, Algorithms, Symbols and Formulas, Errors in theories, Financial Mathematics, The Normal Distribution, Chaos Theory

##### *Physics*

Plate Tectonics, Energy, Quantum Physics,

Climate and Weather, The Big Bang, The Standard Model, Newton, Einstein, Entropy, Oceanic currents, Electromagnetism, The Solar System, Precision in measurement

##### *Biology and Chemistry*

The Periodic Table, Avogadro, Darwin, The Brain, Cognition, Photosynthesis, Enzymes, The Ecosystem, The Pavlov reaction, Micro-

organisms, Life expectancy, Catastrophies, DNA, Sex, Ancestors, Beri-beri, Language

##### *Technology*

Sanitary systems, The Transistor, The Nuclear Bomb, Plastic, GPS, Dikes, Agriculture, Robots, The Computer, The Telephone, Technology and City Development, The Bicycle, Nanotechnology