

## **Ali Nesin**

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Citation: Ali Nesin has been awarded with the Leelavati Prize 2018 in recognition of his outstanding contributions and great achievements towards increasing public awareness of mathematics in Turkey, especially because of his tireless work in creating and developing the “Mathematics Village” as an exceptional, peaceful place for education, research and the exploration of mathematics for a wide range of people.

The Nesin Mathematics Village is a haven for mathematical learning and research tucked into a remote mountain town in Turkey, bringing students at all levels together with top researchers from Turkey and around the world. It’s the creation of mathematician Ali Nesin, winner of the 2018 Leelavati Prize.

A driving belief at the Mathematics Village is that students who struggle with mathematics primarily do so because of fear, and that everyone has roughly equal levels of mathematical talent. The village is a place for anyone to come and enjoy mathematics, without having to perform or to convince anyone that they’re smart. Students attend lectures for 6 to 8 hours a day, and mathematical conversations spill over late into the night. Informal lectures are held from 9 to 11pm, and attendees often bring their wine glasses from dinner with them. In the summer, the brick, stone and clay buildings overflow with around 400 students, some in tents because there’s not enough dormitory space.

High school students come for two-week sessions to encounter topics that are not ordinarily covered in school, including graph theory, probability, combinatorics, game theory, analysis and algebra. Most importantly, they are exposed to real mathematical thinking, as opposed to the rote memorization that tends to be emphasized in standard Turkish schooling. Students learn to tackle problems whose solutions aren’t known beforehand, come up with original ideas, make arguments, and recognize logical fallacies. University students study more advanced topics, usually organized around a theme. During the academic year, researchers use the village for workshops or as a retreat center for collaboration, and in January and February, winter schools are organized.

The village is a remarkably beautiful and peaceful to do mathematics. Some of the lecture rooms are open-air, an expansive library has a balcony with a view across the hills, and there are Turkish baths for both men and women. There is no TV or broadcast music (though participants sometimes bring musical instruments to play in the evening). Lecturers volunteer their time, receiving only room and board. Students also do work to help maintain the village, from peeling potatoes to cleaning toilets.

All of this came to be because Nesin made the decision to devote himself to nurturing mathematics education in Turkey, even though he was in the middle of a burgeoning research career. In 1995, his father, the famous Turkish author and intellectual Aziz

Nesin, died, and Ali Nesin decided to return to Turkey and run his father's educational project, the Nesin Foundation, which provided homes and schooling to children from disadvantaged families. He also became head of the mathematics department at Istanbul Bilgi University, working to create a department with the highest possible standards.

But Nesin soon realized that his university students arrived hobbled by their high school preparation. They had gaps in their knowledge, and they had never previously had the chance to be mathematically creative. The school year alone, he realized, wouldn't be enough time to accomplish his goals with them. A series of six-week summer workshops were organized to support these students, but after a few years, Nesin began dreaming up a better solution: his Mathematics Village. It has grown every year since.

The village is particularly remarkable because the recent politics in Turkey have been extremely difficult for intellectuals. Nesin himself has had to overcome major bureaucratic obstacles to create the village. He was unable to get official authorization for construction from local authorities. One purported reason for the denial was that educational institutions require permission from the government, which Nesin didn't have. However, the Mathematics Village is not an educational institution — it's a nonprofit organization that doesn't offer degrees. A more significant reason for the resistance to the Mathematics Village is that Ali Nesin's father was a prominent atheist, a controversial belief in religiously conservative Turkey. The architect of the Mathematics Village, Sevan Nisanyan, who is also a prominent atheist, was jailed for illegal construction in 2014. He escaped in 2017 and is living in Greece. Hundreds of other intellectuals across Turkey have also been arrested, and hundreds or thousands of scholars have fled Turkey.

But Nesin continues to be committed to bringing mathematics to the young people of Turkey. In addition to his work with the Mathematics Village, he created a mathematics magazine for young people, *Matematik Dnyası*, or *The World of Mathematics*, and he is on the editorial committee of *NTV-Bilim*, a Turkish popular science journal. As well as writing many popular mathematics articles for magazines, he has written nine popular mathematics books, including *Mathematics and Games*, *Mathematics and Nature*, *Mathematics and Infinity*, and *Mathematics and Truth*. Several of his lecture notes and monographs have received awards and become recommended by the Turkish Academy of Sciences.

In the store of the Mathematics Village, the most popular T-shirt is one with a drawing of a mathematician, who, having completely filled the blackboard he is at, simply keeps writing on the adjacent wall. The caption says, "Mathematicians Without Borders," a reference to the famous "Medecins Sans Frontiers," the doctors who travel to strife-filled areas of the world and volunteer helping people. The mathematician on the T-shirt, with wild hair, a beard and glasses, looks remarkably like Ali Nesin.