Abstracts

Proving by telling stories

By Pedro Tytgat, Uitwiskeling

For several years, I've used Combinatorics as a way to introduce my students (17-18 yrs) to a new proof method I call 'proving by storytelling.' In this workshop, I'll provide the same introduction I give my students, guide you through some practice problems, and show how this approach can be applied beyond combinatorics to other areas of discrete mathematics.

Sand Piles TriEx

By Laure Ninove, GEM UCLouvain

When a continuous problem is addressed as a discrete one and vice versa… We will focus more specifically on a problem that is suitable for Saturday: welcome to the sandbox! The piles of sand near construction sites rarely have a very regular shape, but if we slowly and conscientiously pour sand on a flat surface, we can build a nice cone of sand. We can also obtain other shapes of piles, by pouring as much sand as possible on small flat platforms of various shapes, raised so as to let the excess sand flow away. This activity can be an opportunity to work with the students in S. Stein's TriEx approach.

Music & Combinatorics

By Rogier Bos, Freudenthal Institute, Utrecht University

The beauty and creativity of music has little to do with mathematics. The connections between mathematics and music have been blown up to mythic proportions.

However, as someone who loves both music and mathematics, I can not help but use mathematics to think about music. As an amateur jazz improviser and composer for guitar, I used mathematics not to make choices in music, but to see what the options were. What combinations of tones and rhythms are possible? This leads you into the field of combinatorics with excursions to recursive sequences and symmetry.

At the end of this talk, you will know precisely how many rhythms there are of a given length, how many chords there are of a given number of tones, and how many scales there are. For what it's worth...