

# Introduction

*Imagine all the people  
Sharing all the world ...*  
John Lennon

Imagine mathematics, imagine with the help of mathematics, imagine new worlds, new geometries, new forms. Imagine building mathematical models that make it possible to manage our world better, imagine solving great problems, imagine new problems never before thought of, imagine music, art, poetry, literature, architecture, theatre and cinema with mathematics. Imagine the unpredictable and sometimes irrational applications of mathematics in all areas of human endeavour.

Imagination and mathematics, imagination and culture, culture and mathematics. For some years now the world of mathematics has penetrated deeply into human culture, perhaps more deeply than ever before, even more than in the Renaissance. In theatre, stories of mathematicians are staged; in cinema Oscars are won by films about mathematicians; all over the world museums and science centres dedicated to mathematics are multiplying. Journals have been founded for relationships between mathematics and contemporary art and architecture. Exhibitions are mounted to present mathematics, art and mathematics, and images related to the world of mathematics.

The volumes in the series “Imagine Math” are intended to contribute to grasping how much that is interesting and new is happening in the relationships between mathematics, imagination and culture.

This second volume of the series begins with the connections between mathematics, numbers, poetry and music, with the latest opera by Italian composer Claudio Ambrosini. Literature and narrative also play an important role here. There is cinema too, with the “erotic” mathematics films by Edward Frenkel, and the new short “Arithmtique” by Munari and Rovazzani. The section on applications of mathematics features a study of ants, as well as the refined forms and surfaces generated by algorithms used in the performances by Adrien Mondot and Claire Bardainne. Last but not least, in honour of the hundredth anniversary of his birth, a mathematical, literary and theatrical homage to Alan Turing, one of the outstanding figures of the twentieth century, a great mathematician who was the victim of the prejudices of his day.

The topics are treated in a way that is rigorous but captivating, detailed but full of evocations. An all-embracing look at the world of mathematics and culture.

*Michele Emmer*





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