Foundation Matheliebe

Matheliebe / math love, created in 2012, a traveling exhibition of the non-profit foundation Matheliebe
In der Fina 15
9494 Schaan · LIECHTENSTEIN
stiftung@matheliebe.li
matheliebe.li

Previous stations of exhibition:
Liechtenstein: Vaduz
Austria: Graz
Croatia: Zagreb
Switzerland: Kreuzlingen
Germany: Munich, Dortmund and Heidelberg

Nomination at the European Cultural Brands Award Berlin 2014 in the category European Educational Program

Accompanying exhibition catalog available in German and English

Patronage:

AMT FÜR KULTUR
FÜRSTENTUM LIECHTENSTEIN

We wish to thank

- RHW-Stiftung
- Eugen Längle, formerly WERFO AG
- Stiftung Fürstl. Kommerzienrat Guido Feger
- OC Oerlikon Balzers AG
- Bank Frick
- HILTI AG
- Ivoclar Vivadent AG
- Karl Mayer Stiftung
- Neutrik AG
- and over 40 other sponsors

Matheliebe
matheliebe.li

Foundation Matheliebe

Nephroid as focal line in the coffee cup

Sunflower

Maths is also entertaining.

For example the story of Leonardo of Pisa – also known as Fibonacci. The renowned European mathematician of the Middle Ages explored the growth laws. In doing so rabbits helped him. In "liber abaci", translated as the "Book of Calculation", he deliberated on the following problem: A pair of rabbits, confined in an enclosure, breeds and in the first month have two offspring – a male and a female.
Fibonacci's question was: How many pairs of rabbits are born in one year? Each pair breeds a new pair two months after being born. From then on, a new pair of offspring is born to the pair every month. The animals live indefinitely.
The answer to his question was his famous sequence:

1, 1, 2, 3, 5, 8, 13, 21,…; the sequence can be continued for an infinite number of months.

Mathematicians are still researching it today.

Mathematics is a powerful cultural achievement. The arrangement of seeds in sunflowers, the mirrored sunlight in the coffee cup, the climbing safety gadgets for alpinists – mathematics is everywhere.

©cuadrilla

Have you ever played with a truncated icosahedron? Of course you have, because this is geometrically what a conventional football is.

The traveling exhibition of the foundation Matheliebe invites you to the exciting world of mathematics. The exhibition makers, led by the passionate former mathematics teacher Georg Schierscher, "translate" mathematics into reality by using impressive visual material.

Schierscher's concern is to awaken a love of mathematics. In order to achieve this during his teaching at the Liechtenstein Grammar School, he created models according to his didactic ideas of bringing mathematics to life. He built parts of these models himself and also got help from apprentice workshops at business and manufacturing companies in Liechtenstein, or he drew inspiration from everyday life. This is how the football came to be a truncated icosahedron and the focal line in the coffee cup turned out to be a nephroid.

Schierscher's expressive exhibition, designed by industrial designer Rainer Mietsch, can be seen on around 300 square metres. The collection includes over one hundred physical models, objects from nature and everyday life, computer graphics and -animations, stamps as well as coins and medals with a mathematical reference. The fascination of numbers, forms and orders thus becomes tangible. Visitors are invited to join in and work on given tasks; they will discover the mathematical laws behind everyday phenomena – and experience them: Mathematics is everywhere, mathematics is beautiful!

1 Truncated icosahedron
2 Icosahedron
  cardboard models,
  built by Georg Schierscher

Friend

"Mathematics is the ordering force in the jungle of phenomena." It is also the basis for the art of engineers, architects and for "designers" in the modern world. Mathematics is part of our everyday life. The right shapes can even overcome a fear of heights! Here is the proof:

A clamping device can reliably secure the lives of mountaineers and of all whose job involves climbing. These so-called friends are placed in rock cracks with retaining jaws and spread apart, and so develop enormous clamping forces. The secret behind the elaborate design are the edges of the clamping elements, which are in the shape of a logarithmic spiral. This mathematical property ensures that the friend generates the correct static friction in every possible position.

Exhibition Areas

The exhibits are arranged according to seven key themes:

- **GROWTH AND SHAPE**
  (growth processes)
- **FILIGREE, FRACTAL, DYNAMIC**
  (mathematics inspired by cauliflowers, clouds and coastal clippings)
- **FOLLOWING THE FOOTSTEPS OF ENGINEERS**
  (mathematics in engineering, in road construction and structural engineering)
- **GOLD MINE**
  (geometry related to the golden ratio)
- **MODELS WITH CORNERS AND EDGES**
  (polyhedrons and their geometric properties)
- **ARCHIMEDES RETURNS**
  (great ideas about circles and spheres)
- **MIRROR, MIRROR ON THE WALL, …**
  (reflections, symmetry)

Foundation Matheliebe M