Press release

Vaduz, 19. November 2012

"Matheliebe": mathematics you can touch and grasp
The new touring exhibition of the Liechtenstein National Museum invites you to an exciting expedition through the world of mathematics.

Vaduz, 15 November 2012 – The treasure chest of mathematics is opened by the touring expedition "Geopythafibotonpolyhypotesaeder! Matheliebe." starting on 22 November 2012 in the Liechtenstein National Museum in Vaduz (until 7 April 2013).

The opening ceremony will be on
Wednesday, 21 November 2012, 8.00 p.m.
in the Liechtenstein National Museum in Vaduz.
A tour of the exhibition will follow. A small reception will round off the opening evening.

Mathematics explains the world

Mathematics is beautiful, it is sensuous – and being a living art, it is ubiquitous. Today's mathematics has developed through millennia, it has many of its roots in natural sciences. It puts the world in terms of abstract precision, and it permeates our everyday life – every bridge construction, every "smart" device contains mathematics. It can explain demographic change just as well as compound interest – or why pumpkins have to lie on the ground, and why polar foxes have short ears while desert foxes have long ones.

" Nature works in scale everywhere, and accordingly everything has its correct size."
D'Arcy Wentworth Thompson (1860-1948), zoologist, considered the first bio-mathematician

400 square meters to participate and understand

Mathematics is inspired – by clouds, movements, ideas. And mathematics inspires. This is proven on 400 square meters of exhibition by around one hundred physical models, items from nature and everyday life, computer graphics and computer animations, images, coins, and medals with mathematical motives.

Because the senses are food for the mind, formulae have been largely refrained from. In contrast, visitors are invited to join in, to discover mathematical laws behind everyday phenomena. The "Mirror Cabinet of Infinity" shows an impressive illusion of the multiple self. The car race track illustrates why elegant transition arcs – clothoid curves – make traffic safer. Visitors investigate why polyhedra have fascinated mathematicians for 3,000 years, how Archimedes felt his way towards the mysterious, "scintillating number" pi (Jean-Paul Delahaye, French mathematician and information scientist), and how pi is "dicerolled" today using the Monte Carlo method. The exhibition also tells why there are square drill holes and "paradox monster shapes" with a finite area but an infinite circumference, or why the Romanesco broccoli is a fractal.

"The decisive criterion is beauty; there is no lasting room in this world for ugly mathematics."
Godfrey Harold Hardy (1877-1947), British mathematician

Own activity: the app for "Matheliebe"

A smartphone application ("app") programmed specifically for the exhibition accompanies visitors. It holds the answers to the many exciting questions marked as "own activity". Own activity sheets are available on all subjects with QR codes printed on them for all questions: hold smartphone to code, scan – and see the solution displayed on your phone.

"Mathematics alone satisfies the mind through its extraordinary certainty."
Johannes Kepler (1571-1630), German astronomer and mathematician

Love of mathematics

The initiator and curator of the exhibition is dedicated former mathematics teacher Georg Schierscher. His mission: to awaken the joy of mathematics. But often, it is the teaching methods that prevent enthusiasm from becoming infective. "Unfortunately, the range of illustrative teaching material is small", the educator explains. This is why he boosted his teaching activities at the Liechtenstein Gymnasium in Vaduz by purchasing his own models to help mathematics materialise. Some he built himself, some he received from apprentice workshops of Liechtenstein trade or industry firms of worldwide renown, and some he discovered in everyday life: a football turns out to be a truncated icosahedron, and a car headlight a parabolic mirror.

"The senses are food for the mind. Therefore, students should be put in a position to experience mathematics through the senses. Understanding begins where one can sense the full range of reality", says Schierscher. And business, too, benefits from school graduates who like mathematics, he says. Now retired, he wants to make his collection an experience for future generations of students. This is why "Geopythafibotonpolyhypotesaeder! Matheliebe." is conceived as a touring exhibition – not only for museums, but also for schools and public buildings, among others.

The exhibition in brief

"Geopythafibotonpolyhypotesaeder! Matheliebe."
22 November 2012 to 7 April 2013
Liechtensteinisches Landesmuseum
Städtle 43, PO Box 1216
9490 Vaduz/Principality of Liechtenstein
www.matheliebe.li

Opening hours:
Tuesdays, Thursdays to Sundays: 10 a.m. - 5 p.m., and Wednesdays 10 a.m. - 8 p.m.

The exhibits are broken down into seven topics: Growth and Form (growth processes), Delicate, Fractal, Dynamic (mathematics inspired by cauliflower, clouds, and stock exchange prices), Tracking Engineers (mathematics in engineering, road construction, and building construction), Bonanza (geometry around the golden section), Once Again, Archimedes (ingenious ideas around circle and sphere), Having an Edge (multi-faced bodies and their geometric properties), Mirror, Mirror on the Wall,… (mirroring, symmetry).

The exhibition is realised thanks to main sponsors
Oerlikon Balzers, Bank Frick Liechtenstein, and RHW-Stiftung
and thanks to the support of about 50 more Liechtenstein municipalities, companies, private individuals, and foundations. By their support, they all manifest the importance of mathematics.

The Liechtenstein National Museum is a public law foundation of the Principality of Liechtenstein with head office in Vaduz.

For inquiries, interviews, shooting, and photography appointments please contact:

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Photos of the exhibition "Geopythafibotonpolyhypotesaeder! Matheliebe" are available in the "Medieninfo" section at: www.landesmuseum.li