

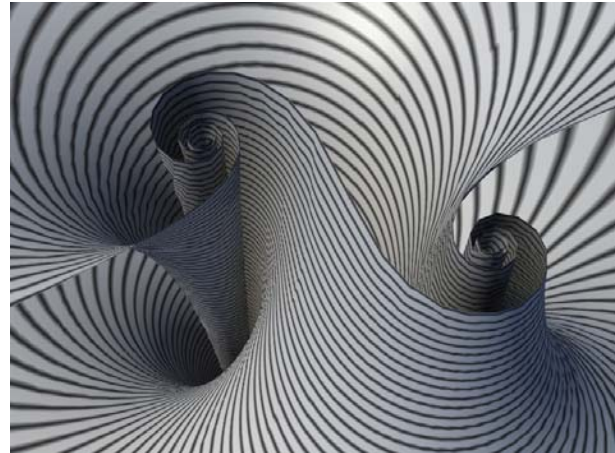
Intuitive Geometry
An LKL Maths-Art seminar by
Daniel Piker
Tuesday 9 December, 6.00–7.30pm
London Knowledge Lab, WC1N 3QS

The language of Symmetry allows us to describe not only the rotation and translation of shapes in space, but also the shape of those transformations themselves. Quite apart from whatever shapes are being transformed, we can talk about rotation itself as a thing with a definite form.

The exploration of such dynamic forms can give us deep insights about the nature of physical reality and they also have a startling beauty all of their own.

These ideas stretch our everyday sense of space and shape, but spatial intuition can be exercised through use and play. Engaging with the geometry and topology of 2, 3 and even 4 dimensional spaces can enhance the mental facility to manipulate imagined objects. Increasing spatial ability in this way can open up thrilling new vistas and could be useful for artists, architects, designers, sculptors or anyone who has to deal with space in a creative way.

The talk will cover a range of topics from tensegrity to topological torsion, Chirality to complex numbers, quasicrystals to quaternions, fluid flows to folding spaceframes, spinors to stereographic projection, loxodromes to logarithmic spirals, Moebius transformations to minimal surfaces, and Daniel's personal approach to the role of geometry in architecture. All copiously illustrated with animations, models, toys and puzzles.

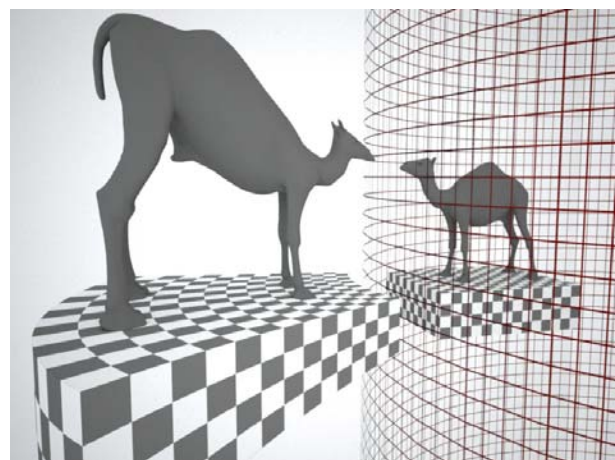


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Daniel studied at the Architectural Association and has worked for Arup's Advanced Geometry Unit (AGU). He has a particular fascination with geometry and the nature of space which he explores through the making of experimental structures, sculptural forms, toys and puzzles. Using physical models, 3D architectural modeling software and custom written programs, he takes deep and abstract concepts from mathematics and physics and manifests them so they can be appreciated visually and intuitively.

You can see more of his work at

<http://spacesymmetrystructure.wordpress.com/>



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All welcome. No registration or ticket required, but an email to lkl.maths.art@gmail.com is appreciated to assist with planning.

LKL Maths-Art seminar series

Website and archive: www.lkl.ac.uk/events/maths-art

This seminar is part of a regular series of maths-art seminars held at the London Knowledge Lab, usually on the second Tuesday of each month during term times. To receive email announcements about events, subscribe to the mailing list at:

www.dcs.bbk.ac.uk/mailman/listinfo/lkl-maths-art .

We propose these seminars as explorations of the connections between "mathematics" and "art", where both terms are understood broadly: art implies visual art (painting, drawing, sculpture, computer graphics, video), architecture, music, textile art, literature/poetry (and others), and mathematics implies both mathematics as a discipline and the related disciplines in science and engineering for which mathematics is an essential means of expression and communication.

Next seminars: December 12: Special afternoon seminar, *Anamorphic art: A technical & demonstrations seminar*. And to continue in January.

The seminar organisers are John Sharp and Phillip Kent. We welcome your suggestions about speakers or topics for future seminars; email us at lkl.maths.art@gmail.com .

Getting to the London Knowledge Lab

Nearest tube stations are: Holborn (Central, Piccadilly lines), Russell Square (Piccadilly line). Approximately 10-15 minutes walk from either station.

