Blue Gallery, Brantwood

1

Ruskin's Perspectives: The Art of Abstraction

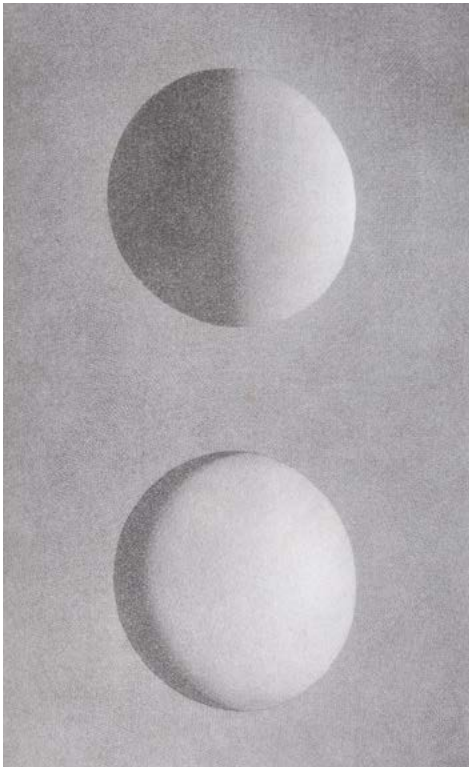
22 July – 25 Sept 2022

7

8

THE RUSKIN
MUSEUM & RESEARCH CENTRE

Ruskin's Perspectives: The Art of Abstraction



'Ruskin's Perspectives: The Art of Abstraction' draws on a cultural history of mathematics to explore scientific ideas about the relationship of things and their properties to each other, in John Ruskin's (1819–1900) time and our own.

From trade and travel, to the economy and decision making based on statistics and probability, the impact of mathematics on nineteenth century culture and society was immense. As scientists worked by deduction, as well as empiricism based on observation and imitation, these methods became part of the artist's process.

Mathematics was at the centre of Ruskin's art. His three textbooks — *The Elements of Drawing*, *The Elements of Perspective*, and *The Laws of Fésole* — evidence the diffusion of mathematical ideas, methods, and materials in his works.

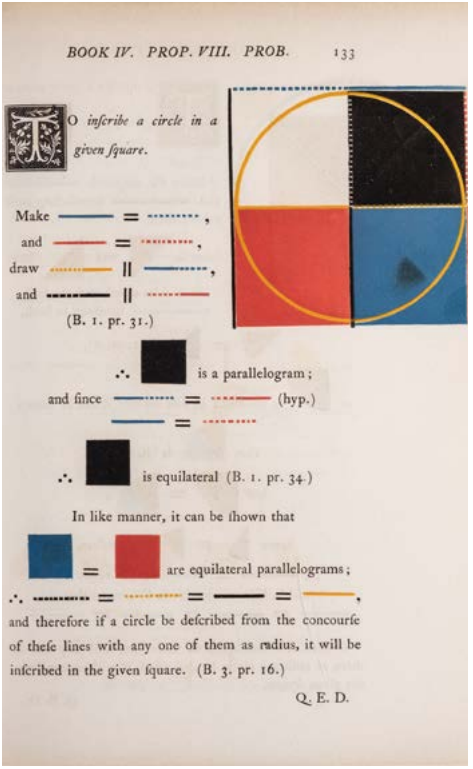
Fascinated by form and pattern, proportion and symmetry, Ruskin believed that mathematical knowledge was an essential component of both making and looking at art.

Drawn by John Ruskin, Engraved by George Allen. Plate X., ***The Laws of Fésole*** (London: George Allen, 1879)
Cover: John Ruskin, Frederick Crawley, ***Rouen: Cathedral of Notre Dame, north transept door*** (detail), 1854.

‘The history of mathematics should really be the kernel of the history of culture.’

George Sarton, *The Study of the History of Mathematics*, 1936

Perpetual Form: Mathematics in Culture



BOOK IV. PROP. VIII. PROB. 133

TO *inſcribe a circle in a given ſquare.*

Make —— = ·····,
and —— = ·····,
draw ····· ‖ ——,
and ——— ‖ ·····
(B. 1. pr. 31.)

∴ ■ is a parallelogram;
and ſince ——— = ——— (hyp.)
—— = ·····
∴ ■ is equilateral (B. 1. pr. 34.)

In like manner, it can be ſhown that
■ = ■ are equilateral parallelograms;
∴ ····· = ····· = —— = ——,
and therefore if a circle be deſcribed from the concourſe of theſe lines with any one of them as radius, it will be inſcribed in the given ſquare. (B. 3. pr. 16.)

Q. E. D.

Mathematics was at the centre of nineteenth century culture, and a basic knowledge of its concepts was common amongst people of all classes. Mathematical understanding grew from the philosophy and science of classical Greece. Euclid's treatise *Elements* was used to teach mathematics from its publication around 300 BC to the late nineteenth century.

Mathematics was closely interwoven with religion, and religious principles governed scientific inquiry. The laws of proportion and distribution of mass, alongside the symbolism of pure geometric forms like the circle or triangle, manifest in Gothic architectural style. Its defining feature – the pointed arch – represents the conjunction of science, philosophy, religion and art.

In Ruskin's lifetime, mathematics became separated from religion. This process – and the relationship between abstract forms outside of space and time, only existing within systems of human thought, and those that embody shapes in the natural world – is played out in his works.

Oliver Byrne (ed.), ***The first six books of the elements of EUCLID, in which coloured diagrams and symbols are used instead of letters for the greater ease of learners ...*** (London: William Pickering,1847). Book with coloured plates/illustrations.
Ref: 38538 © The Royal Society

‘The practical geometry of nature … in the ellipses of her sea-bays in perspective, the parabolas of her waterfalls and fountains … and the infinite variety of curvature … in mountain débris …’

John Ruskin, *The Eagle’s Nest*, 1872

John Ruskin in the Age of Science

A series of exhibitions in London and the Lakes showcasing works from the collections of the Royal Society, London and Lancaster University's Ruskin Whitehouse Collection.

Curated by Sandra Kemp (The Ruskin), with Keith Moore (the Royal Society) and Howard Hull (Brantwood), these exhibitions place Ruskin alongside his nineteenth century scientific contemporaries, exploring Ruskin's influence on science and society, in his time and our own.

The Ruskin Whitehouse Collection was purchased by Lancaster University in 2019, with generous support from the National Heritage Memorial Fund and others. The Collection is on permanent display at both The Ruskin and Brantwood, John Ruskin's former house, garden and estate on the shore of Coniston Water.

While The Ruskin is closed for major refurbishment, this series of exhibitions displays the Ruskin Whitehouse Collection in London and the Lake District. The Ruskin will reopen in 2024.

Apr
–
Dec
2022

THE RUSKIN
MUSEUM & RESEARCH CENTRE

Lancaster University

THE ROYAL SOCIETY

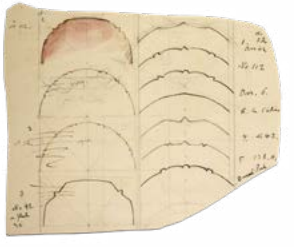
John Ruskin's home
Brantwood

Syllables of Thought: Mathematics in Art

John Ruskin, ***View on Grand Canal, Venice*** (detail), 1876.
1996P1067 © The Ruskin, Lancaster University

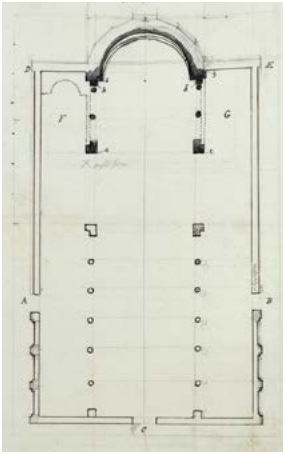
Since around the sixth century BC, people have studied the natural world through its structures, forms and patterns. Ruskin was fascinated by natural phenomena that epitomised mathematical principles. He used his knowledge of perspective and abstraction to interrogate geometric and organic forms, and communicate his findings. Ruskin photographed the elegant spiral structure of the Nautilus shell, that suggests the Golden Ratio, or 'divine proportion'. In his drawings, he captured the 'leading lines' of natural features, contributing to evidence of processes like glacial erosion.

Ruskin built a scientifically significant collection of 2500 minerals and rocks, that featured in his teaching and illustrated publications. 150 years ahead of the curve, Ruskin's comparisons of natural forms at micro and macro scale anticipate fractal geometry: the mathematical framework that changed the way we understand geometry and nature.

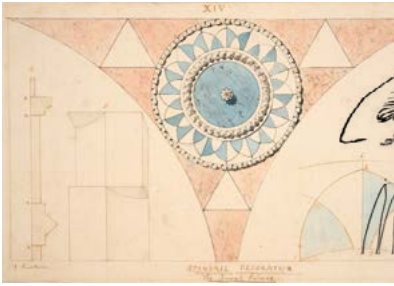


1

2



3

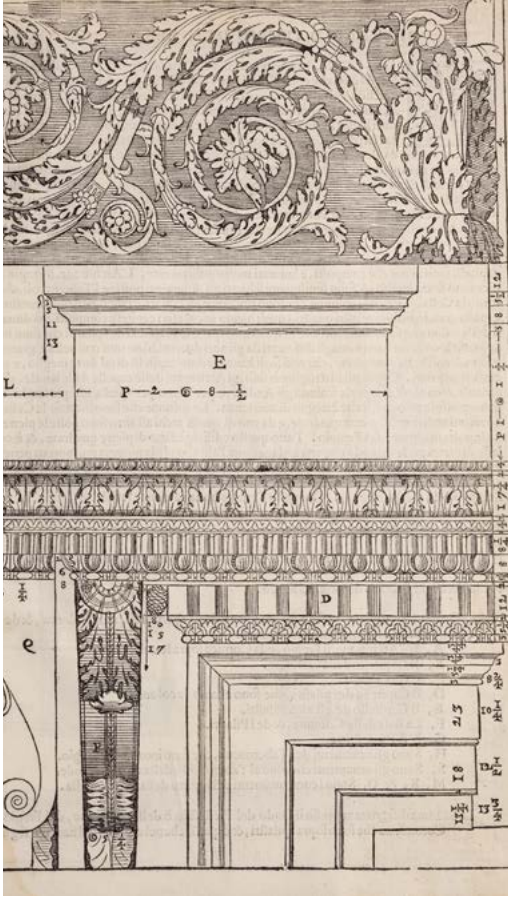


4

6

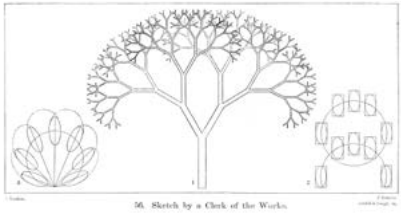
5

1 John Ruskin, ***Venice & Verona - Album of Sketches & Notes,*** n.d.
1996P1639 © The Ruskin, Lancaster University
2 John Ruskin, ***Nautilus 1868 Wks XXI pl 31 CW 1183***.
© The Ruskin, Lancaster University
3 John Ruskin, ***Venice & Verona - Album of Sketches & Notes, Murano, Plate A,*** n.d.
1996P1640 © The Ruskin, Lancaster University
4 John Ruskin, ***Stones of Venice: Spandril Decoration - The Ducal Palace,*** n.d.
1996P1041 © The Ruskin, Lancaster University
5 John Ruskin, John Hobbs, ***Venice. St Mark's. South Façade: Detail and Tetrarch Sculpture,*** 1850.
1996D0021 © The Ruskin, Lancaster University
6 John Ruskin, Figs. 9–11, ***Love's Meinie. Three Lectures on Greek and English Birds***
(London: George Allen, 1881)



7

8



9

7 Albrecht Dürer, ***Underweysung der messung, mit dem zirckel un richtscheyt, in Linien ebnen unnd gantzen corporen*** (detail), 1525.
Book. Ref: 2114 © The Royal Society

8 Joseph Goold, ***Harmonograph figure,*** 1901.
Drawing. Purple ink on cream pasteboard. 114 x 76 mm. Ref: MM/22/84 © The Royal Society

9 John Ruskin, ***'Sketch by a Clerk of the Works', Modern Painters V, Plate 56***
(London: George Allen, 1905)

Leading Lines: Mathematics in Nature

From the Renaissance onwards, the science of mathematics had led to a new form of making art based on geometry. Ruskin studied Albrecht Dürer (1471–1528), the German painter, printmaker and architect who published the first known scientific treatment of perspective.

Ruskin worked from reality: documenting detail, land and cityscapes in the open air, rather than in a studio. He produced architectural and technical drawings that feature precise shapes, calculations and observations. These illustrate his insistence on accuracy of measurement. Drawing on a range of techniques to reveal underlying principles that structure the world around us, his works show the familiar in a new way.

In 1900, the year of Ruskin's death, the impressionist artist Claude Monet is reported as saying that ninety per cent of the theory of impressionism is contained in Ruskin's textbook, *Elements of Drawing*.

John Ruskin, ***Aiguille Charmoz, Chamonix*** (detail), 1854.