

1. Record Nr.	UNISA996418195503316
Autore	Glaeser Georg
Titolo	Geometry and its applications in arts, nature and technology // Georg Glaeser
Pubbl/distr/stampa	Cham, Switzerland : , : Springer, , [2020] Â©2020
ISBN	3-030-61398-4
Edizione	[Second edition.]
Descrizione fisica	1 online resource (XIV, 694 p.)
Disciplina	516
Soggetti	Geometry Mathematics Computer graphics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	1 An idealized world made of simple elements -- 2 Projections and shadows: Reduction of the dimension -- 3 Polyhedra: multi-faced and multi-sided -- 4 Curved but simple -- 5 More about conic sections and developable surfaces -- 6 Prototypes -- 7 Further remarkable classes of surfaces -- 8 The endless variety of curved surfaces -- 9 Photographic image and individual perception -- 10 Kinematics: Geometry in motion -- 11 Spatial motions -- 12 A variety of filling patterns -- 13 The nature of geometry and the geometry of nature -- 14 More applications -- A Geometrical freehand drawing -- B Geometry and photography -- Bibliography -- Index.
Sommario/riassunto	This book returns geometry to its natural habitats: the arts, nature and technology. Throughout the book, geometry comes alive as a tool to unlock the understanding of our world. Assuming only familiarity with high school mathematics, the book invites the reader to discover geometry through examples from biology, astronomy, architecture, design, photography, drawing, engineering and more. Lavishly illustrated with over 1200 figures, all of the geometric results are carefully derived from scratch, with topics from differential, projective and non-Euclidean geometry, as well as kinematics, introduced as the need arises. The mathematical results contained in the book range

from very basic facts to recent results, and mathematical proofs are included although not necessary for comprehension. With its wide range of geometric applications, this self-contained volume demonstrates the ubiquity of geometry in our world, and may serve as a source of inspiration for architects, artists, designers, engineers, and natural scientists. This new edition has been completely revised and updated, with new topics and many new illustrations.

---