

1. Record Nr.	UNINA9910781991603321
Autore	O'Rourke Joseph
Titolo	How to fold it : the mathematics of linkages, origami, and polyhedra // Joseph O'Rourke [[electronic resource]]
Pubbl/distr/stampa	Cambridge : , : Cambridge University Press, , 2011
ISBN	1-107-21769-5 1-139-23486-2 1-283-29846-5 1-139-12295-9 9786613298461 0-511-97502-3 1-139-11721-1 1-139-12787-X 1-139-11285-6 1-139-11504-9
Descrizione fisica	1 online resource (xii, 177 pages) : digital, PDF file(s)
Classificazione	MAT000000
Disciplina	516.3/5
Soggetti	Liaison theory (Mathematics) Origami - Mathematics Polyhedra Protein folding
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Title from publisher's bibliographic system (viewed on 05 Oct 2015).
Nota di contenuto	Machine generated contents note: Part I. Linkages: 1. Robot arms; 2. Straight-line linkages and the pantograph; 3. Protein folding and pop-up cards; Part II. Origami: 4. Flat vertex folds; 5. Fold and one-cut; 6. The shopping bag theorem; Part III. Polyhedra: 7. Durer's problem: edge unfolding; 8. Unfolding orthogonal polyhedra; 9. Folding polygons to convex polyhedra; 10. Further reading; 11. Glossary; 12. Answers to exercises; 13. Permissions and acknowledgments.
Sommario/riassunto	What do proteins and pop-up cards have in common? How is opening a grocery bag different from opening a gift box? How can you cut out the letters for a whole word all at once with one straight scissors cut? How

many ways are there to flatten a cube? With the help of 200 colour figures, author Joseph O'Rourke explains these fascinating folding problems starting from high school algebra and geometry and introducing more advanced concepts in tangible contexts as they arise. He shows how variations on these basic problems lead directly to the frontiers of current mathematical research and offers ten accessible unsolved problems for the enterprising reader. Before tackling these, you can test your skills on fifty exercises with complete solutions. The book's website, <http://www.howtofoldit.org>, has dynamic animations of many of the foldings and downloadable templates for readers to fold or cut out.
