

1. Record Nr.	UNINA9910455519603321
Autore	Haga Kazuo <1934->
Titolo	Origamics [[electronic resource] ] : mathematical explorations through paper folding // Kazuo Haga ; edited and translated by Josefina C. Fonacier, Masami Isoda
Pubbl/distr/stampa	Hackensack, NJ, : World Scientific, c2008
ISBN	981-283-491-5
Edizione	[[English ed.].]
Descrizione fisica	1 online resource (152 p.)
Altri autori (Persone)	FonacierJosefina IsodaMasami
Disciplina	516/.156
Soggetti	Origami Polyhedra - Models Electronic books.
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di contenuto	Introduction; Until the Publication of the English Edition; Acknowledgments; Preface for the English Edition; Contents; 1. A POINT OPENS THE DOOR TO ORIGAMICS; 1.1 Simple Questions About Origami; 1.2 Constructing a Pythagorean Triangle; 1.3 Dividing a Line Segment into Three Equal Parts Using no Tools; 1.4 Extending Toward a Generalization; 2. NEW FOLDS BRING OUT NEW THEOREMS; 2.1 Trisecting a Line Segment Using Haga's Second Theorem Fold; 2.2 The Position of Point F is Interesting; 2.3 Some Findings Related to Haga's Third Theorem Fold 3. EXTENSION OF THE HAGA'S THEOREMS TO SILVER RATIO RECTANGLES3.1 Mathematical Adventure by Folding a Copy Paper; 3.2 Mysteries Revealed from Horizontal Folding of Copy Paper; 3.3 Using Standard Copy Paper with Haga's Third Theorem; 4. X-LINES WITH LOTS OF SURPRISES; 4.1 We Begin with an Arbitrary Point; 4.2 Revelations Concerning the Points of Intersection; 4.3 The Center of the Circumcircle!; 4.4 How Does the Vertical Position of the Point of Intersection Vary?; 4.5 Wonders Still Continue; 4.6 Solving the Riddle of; 4.7 Another Wonder; 5. ""INTRASQUARES AND EXTRASQUARES"" 5.1 Do Not Fold Exactly into Halves5.2 What Kind of Polygons Can You Get?; 5.3 How do You Get a Triangle or a Quadrilateral?; 5.4 Now to

Making a Map; 5.5 This is the iScienti c Methodi; 5.6 Completing the Map; 5.7 We Must Also Make the Map of the Outer Subdivision; 5.8 Let Us Calculate Areas; 6. A PETAL PATTERN FROM HEXAGONS?; 6.1 The Origamics Logo; 6.2 Folding a Piece of Paper by Concentrating the Four Vertices at One Point; 6.3 Remarks on Polygonal Figures of Type  $n$ ; 6.4 An Approach to the Problem Using Group Study; 6.5 Reducing the Work of Paper Folding; One Eighth of the Square Will Do  
 6.6 Why Does the Petal Pattern Appear?6.7 What Are the Areas of the Regions?; 7. HEPTAGON REGIONS EXIST?; 7.1 Review of the Folding Procedure; 7.2 A Heptagon Appears!; 7.3 Experimenting with Rectangles with Different Ratios of Sides; 7.4 Try a Rhombus; 8. A WONDER OF ELEVEN STARS; 8.1 Experimenting with Paper Folding; 8.2 Discovering; 8.3 Proof; 8.4 More Revelations Regarding the Intersections of the Extensions of the Creases; 8.5 Proof of the Observation on the Intersection Points of Extended Edge-to-Line Creases; 8.6 The Joy of Discovering and the Excitement of Further Searching  
 9. WHERE TO GO AND WHOM TO MEET9.1 An Origamics Activity as a Game; 9.2 A Scenario: A Princess and Three Knights?; 9.3 The Rule: One Guest at a Time; 9.4 Cases Where no Interview is Possible; 9.5 Mapping the Neighborhood; 9.6 A Flower Pattern or an Insect Pattern; 9.7 A Different Rule: Group Meetings; 9.8 Are There Areas Where a Particular Male can have Exclusive Meetings with the Female?; 9.9 More Meetings through a iHidden Doori; 10. INSPIRATION FROM RECTANGULAR PAPER; 10.1 A Scenario: The Stern King of Origami Land  
 10.2 Begin with a Simpler Problem: How to Divide the Rectangle Horizontally and Vertically into 3 Equal Parts

---

Sommario/riassunto

The art of origami, or paper folding, is carried out using a square piece of paper to obtain attractive figures of animals, flowers or other familiar figures. It is easy to see that origami has links with geometry. Creases and edges represent lines, intersecting creases and edges make angles, while the intersections themselves represent points. Because of its manipulative and experiential nature, origami could become an effective context for the learning and teaching of geometry. In this unique and original book, origami is an object of mathematical exploration. The activities in this book diff

---