



© 1997–2009, Millennium Mathematics Project, University of Cambridge.

Permission is granted to print and copy this page on paper for non-commercial use. For other uses, including electronic redistribution, please contact us.

May 2003

Reviews

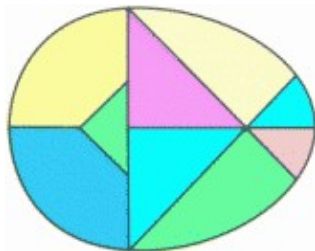
'Dissections: Plane and Fancy'

reviewed by Helen Joyce



Dissections: Plane and Fancy

Geometric dissection is the mathematical art of cutting figures into pieces that can be rearranged to form other figures, preferably using as few pieces as possible. You may already have come across puzzles such as the Aviary Tangram, the pieces of which can be used to form an egg, a chicken and many other shapes; but the ingenuity of the dissections shown here may still be a revelation to you, as they were to this reviewer.



The aviary tangram in action

'Dissections: Plane and Fancy'

Greg N. Frederickson explains the mathematical techniques – many involving *tessellations*, or tilings – used to create some extraordinary dissections. The techniques are all elementary, though some are very cunning. Triangles, squares, crosses, and other polyhedra and many–pointed stars are ingeniously disassembled and reassembled until the reader's mind whirls.

The illustrations are beautiful and plentiful, and I would imagine that this book would make an excellent source for craftsmen, makers of children's toys and puzzle setters. The field has been dominated by amateurs, and quite a few of the enthusiasts whose potted biographies are interspersed in the text were also keen carpenters and made up working models of their dissections. Henry Perigal, subject of "On the dissecting table" from issue 16 of *Plus*, was one of their number.

Handy readers may be tempted by this delightful book to follow in their footsteps, and even the less practically minded will find their feeling for plane geometry enhanced.

Book details:

Dissections: Plane and Fancy

Greg N. Frederickson

paperback – 322 pages (2003)

Cambridge University Press

ISBN: 0521525829

You can buy the book and help *Plus* at the same time by clicking on the link on the left to purchase from amazon.co.uk, and the link to the right to purchase from amazon.com. *Plus* will earn a small commission from your purchase.



Plus is part of the family of activities in the Millennium Mathematics Project, which also includes the NRICH and MOTIVATE sites.