



Journal of Mathematics and the Arts >

Volume 6, 2012 - [Issue 1](#)

715 | 5
Views | CrossRef citations to date | Altmetric

Original Articles

Building a better bracelet: wallpaper patterns in bead crochet

Susan Goldstine & Ellie Baker

Pages 5-17 | Received 25 Aug 2011, Accepted 07 Dec 2011, Published online: 27 Mar 2012

Cite this article <https://doi.org/10.1080/17513472.2012.654423>



Full Article

Figures & data

References

Citations

Metrics

Reprints & Permissions

Read this article

Share

Abstract

A typical bead crochet bracelet consists of a narrow tube of seed beads sewn together to form an uninterrupted hollow band. Creating symmetric colour patterns on bead crochet bracelets is challenging because the beads form a continuous spiral along the length of the bracelet, making it difficult to align design motifs uniformly. We have devised a new technique for translating bracelet patterns into plane tilings and used this to create bracelets based on wallpaper group symmetries to stunning effect. We prove that exactly 13 of the 17 wallpaper groups can be represented by bead crochet bracelets, and we outline a general method for designing a bracelet whose planar bead tiling has a given wallpaper symmetry group.

Keywords:

wallpaper groups

plane tiling

torus

bead crochet

bracelet

jewellery design

Acknowledgements

Sophie Sommer's investigation of wallpaper patterns in bead crochet as part of her science fair project 'Mathematical Explorations in Bead Crochet' was the initial inspiration for our work. She was also kind enough to allow us to interrupt her crocheting of the bracelet in [Figure 1](#) to photograph the process for this article. Robert Fathauer's suggestions for how to construct a regular tiling on a vertical bead crochet chart got us past an early stumbling block. Kira Isaacs and Kate Magauran were patient and accurate bead-stringers extraordinaire. Judith Bertoglio-Giffin's pattern books provided a helpful spring board for thinking about bead crochet pattern design, and Amy Nastasi started everything by generously passing on her bead crochet craft expertise.

Related research

[People also read](#)[Recommended articles](#)[Cited by 5](#)

Information for

Authors

R&D professionals

Editors

Librarians

Societies

Opportunities

Reprints and e-prints

Advertising solutions

Accelerated publication

Corporate access solutions

Open access

Overview

Open journals

Open Select

Dove Medical Press

F1000Research

Help and information

Help and contact

Newsroom

All journals

Books

Keep up to date

Register to receive personalised research and resources
by email

 Sign me up

  

  

Copyright © 2026 Informa UK Limited Privacy policy Cookies Terms & conditions

Accessibility



Registered in England & Wales No. 01072954
5 Howick Place | London | SW1P 1WG