

### GEOMETRIC COLOURING PATTERNS

Suitable for everyone

**Activity Location:** A quiet space

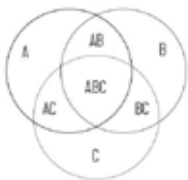
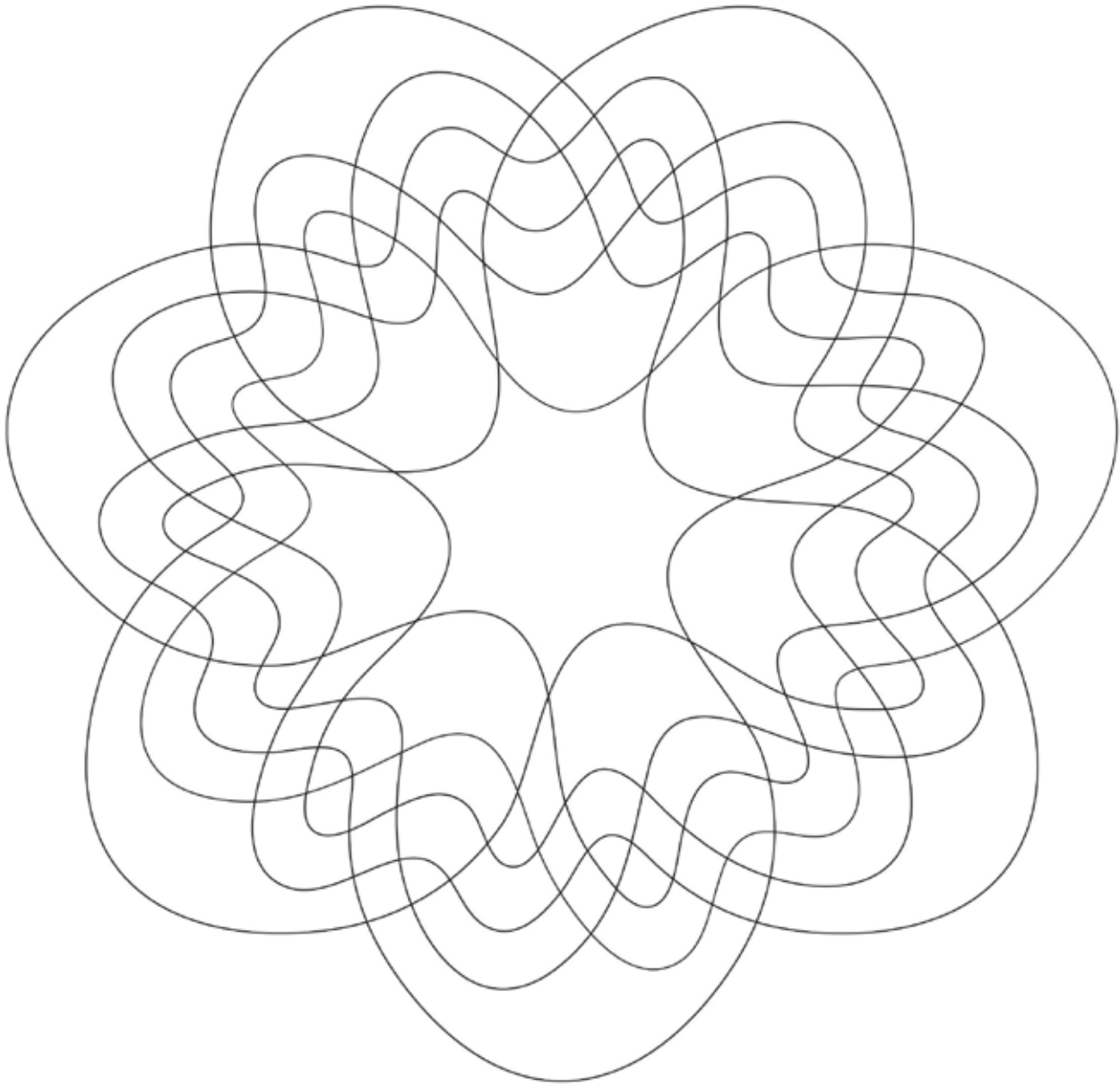
**You will need:** Colouring pens, pencils, enthusiasm.

The latest trends have seen a huge surge in colouring books for **Mindfulness and Relaxation** and now **Colour Yourself Clever: Snowflake, Seashell, Star** by writer Alex Bellos and illustrator Edmund Harris adds maths into the mix. Simply by picking up a colouring pen and filling in the spaces you will be engaging with mathematically artistic ideas.

The idea came about because Alex knew that maths made some people anxious. He wanted them to be able to dip into the world of maths and have a soothing, relaxing and illuminating experience so he came up with the idea of a colouring book.

You need have **NO MATHEMATICAL OR ARTISTIC KNOWLEDGE WHATSOEVER** to enjoy the wonderful mathematical colouring patterns that came out of Alex and Edmund's mathematical musings!

Edmund and Alex have kindly let us have some of their mathematical colouring patterns for this exhibition so that you can have a go yourselves. So, grab some colouring pencils, find a quiet space and start doing some maths. And some colouring!



## SEVENN

A *Venn diagram* shows every possible overlap between two or more sets. At left is a simple Venn diagram with just three sets. The *seven-set* Venn diagram, above, requires a very peculiar shape that looks like a squid or a ghost. To see it, try using your finger to trace the outline of just one set.

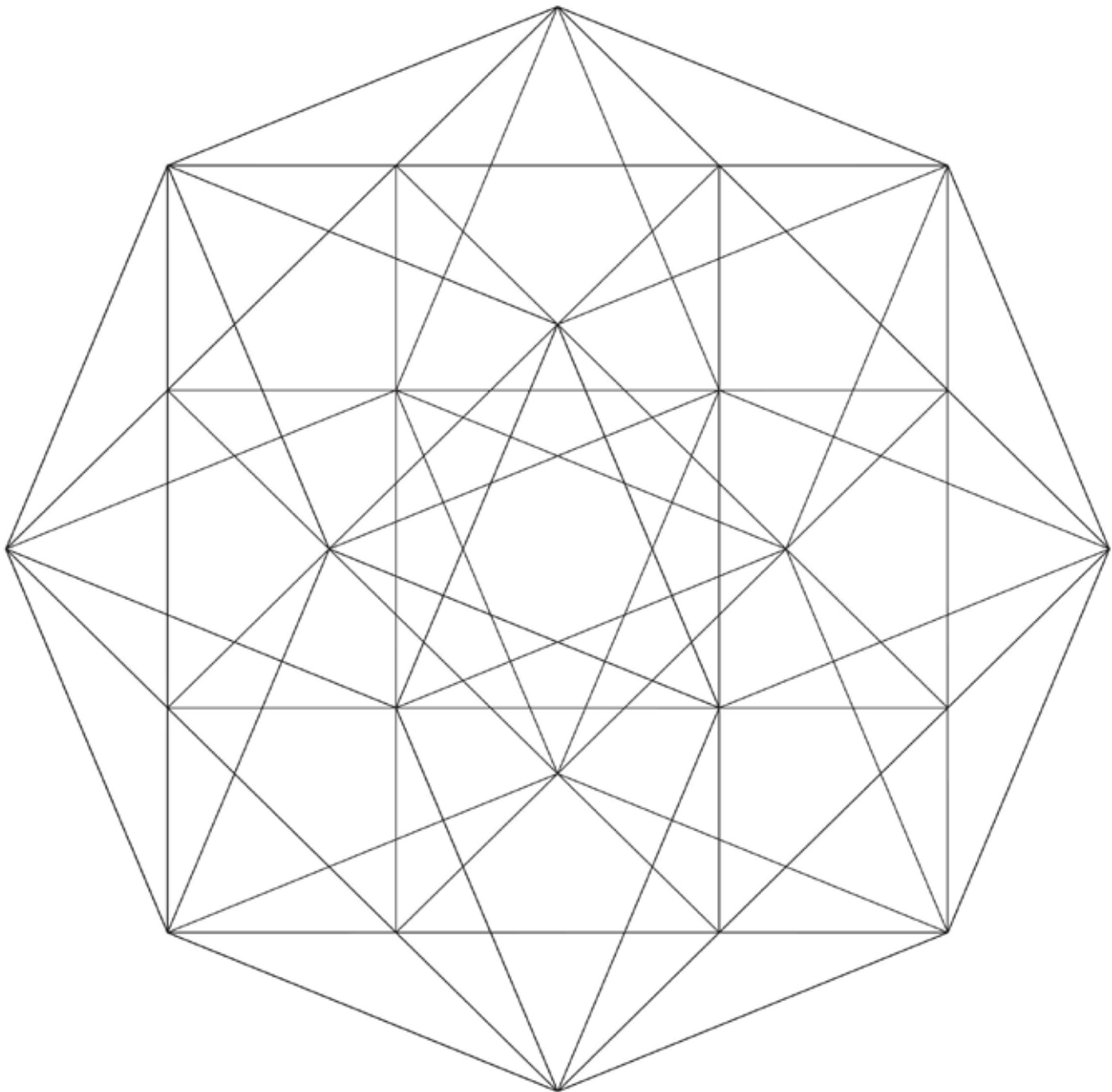
Art copyright © Edmund Harriss. Text © Alex Bellos. This page may be photocopied for educational use. Please include this statement on all copies.



From  
**SNOWFLAKE, SEASHELL, STAR:**  
**Colouring Adventures in Numberland**  
 Alex Bellos and Edmund Harriss | £12.99 | 9781782117889  
*Available wherever books are sold.*

#colouryourselfever  
 SHARE YOUR ARTWORK ONLINE!

**CANON||GATE**  
 www.canongate.co.uk  
 @canongatebooks



## OCTAPLEX

The 3-D shape at left is an octahedron, which has eight triangular faces. If you imagine a *fourth* dimension, you can build the *octaplex*, a 4-D shape with 24 *octahedrons* as faces. Above is the 2-D "shadow" of the octaplex, flattened onto the page.

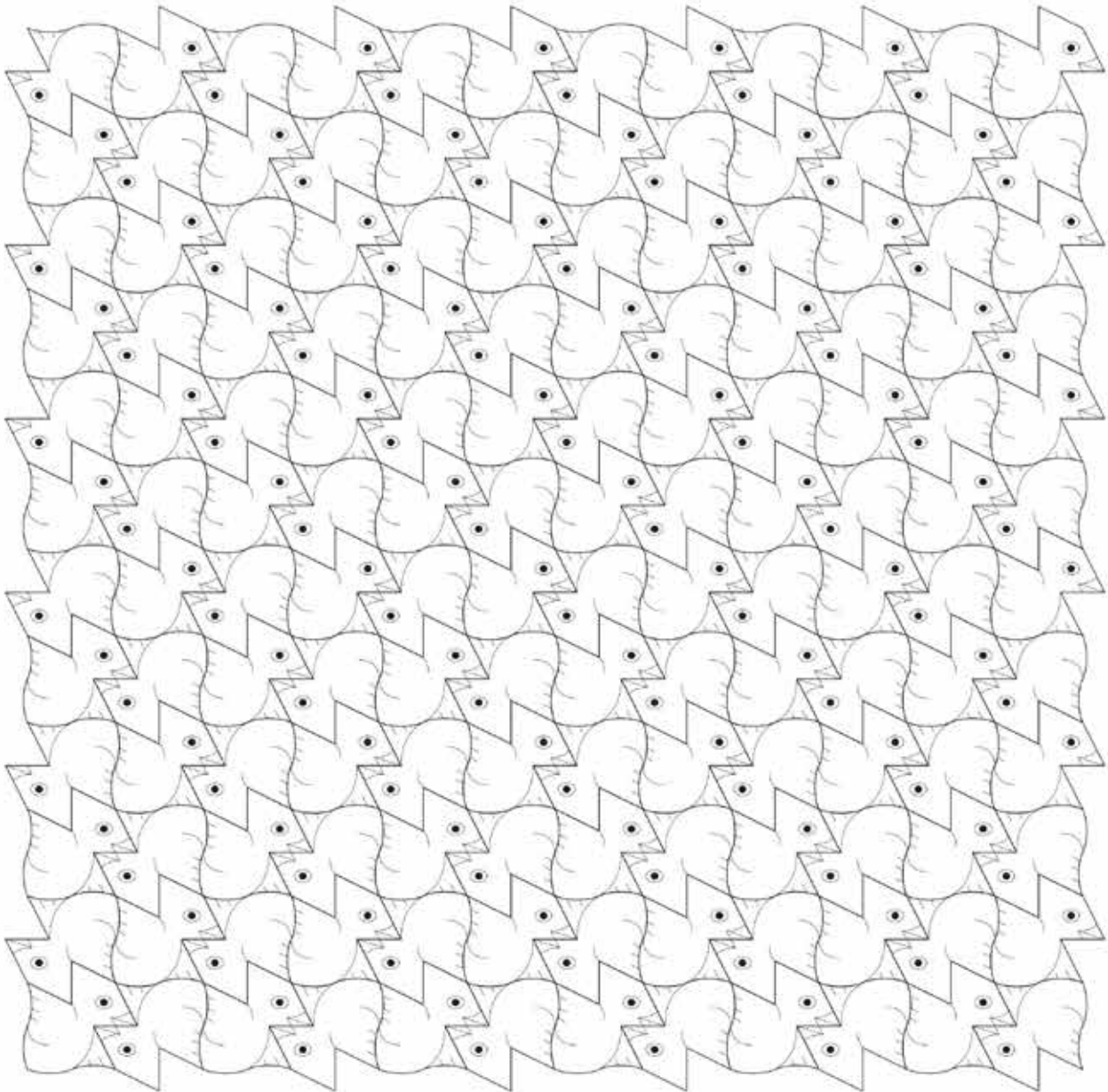
Art copyright © Edmund Harriss. Text © Alex Bellos. This page may be photocopied for educational use. Please include this statement on all copies.



From  
**SNOWFLAKE, SEASHELL, STAR:**  
**Colouring Adventures in Numberland**  
Alex Bellos and Edmund Harriss | £12.99 | 9781782117889  
*Available wherever books are sold.*

#colouryourselfever  
SHARE YOUR ARTWORK ONLINE!

CANON||GATE  
www.canongate.co.uk  
@canongatebooks



## INTERFLOCKING BIRDS

A *tiling* is an arrangement of shapes that leaves no gaps or overlaps. A tiling is *periodic* if it has a repeating pattern. Imagine copying these birds onto tracing paper, and then sliding the tracing paper to a new position. Is there another position where your copy will line up perfectly with the original?

Art copyright © David Bailey ([www.tess-elation.co.uk](http://www.tess-elation.co.uk)). Text © Alex Bellos. This page may be photocopied for educational use. Please include this statement on all copies.



From  
**SNOWFLAKE, SEASHELL, STAR:**  
**Colouring Adventures in Numberland**  
Alex Bellos and Edmund Harriss | £12.99 | 9781782117889  
*Available wherever books are sold.*

#colouryourselfever  
SHARE YOUR ARTWORK ONLINE!

**CANON GATE**  
[www.canongate.co.uk](http://www.canongate.co.uk)  
@canongatebooks

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

11 9, 13 8, 14 7, 15 6, 16 5, 15 4, 14 3, 13 2, 12 1, 11 2, 10 3, 9 4, 8 5, 7 6  
10, 12

## HYPERBOLOID

Using a straightedge, follow the numbers to connect the bottom row of dots with the top row. Each of the dots on the bottom goes with *two* dots on the top, except for the very first and last. Straight lines are all it takes to draw the *hyperboloid*, a 3-D solid with a curvy surface!

Art copyright © Edmund Harriss. Text © Alex Bellos. This page may be photocopied for educational use. Please include this statement on all copies.



From  
**SNOWFLAKE, SEASHELL, STAR:**  
Colouring Adventures in Numberland  
Alex Bellos and Edmund Harriss | £12.99 | 9781782117889  
*Available whenever books are sold.*

#colouryourselfever  
SHARE YOUR ARTWORK ONLINE!

CANON GATE  
www.canongate.co.uk  
@canongatebooks