

The Sydney Hyperbolic Crochet Coral Reef

In the interest of creating a collaborative installation for 2009, here are some patterns to create three Hyperbolic Coral Reef Forms. Any basic crochet stitch- single, double or triple- can be used in the patterns.

The basic principle is to increase the number of stitches in every row. The more often you increase stitches the faster the model will grow and the more crenellated the finished form will be.

The Hyperbolic Plane



1. Begin with a line of chain stitches (any number, eg 16 chain stitches).
2. Crochet into each chain stitch increasing the number of crochet stitches in every row (in the example above the model is made by crocheting 2 stitches into the same stitch every 13 stitches.)
3. At the end of the row turn the crochet around and continue with the same pattern of increase.

The structural integrity can be achieved by using course synthetic yarn, or with softer yarn using a smaller hook or smaller stitch. We encourage the use of recycled/found yarn (or string, plastic and wire or anything else that takes your fancy)



The rate of increase determines how rapidly the space will expand. The rate of increase in this compact hyperbolic plane is an extra stitch every 2 stitches (ie 1 stitch, 1 stitch, then 2 stitches in next stitch, and repeat to end of row) Although it is actually a strip, this model is so convoluted it naturally curls up into a ball-like configuration.

The Double Hyperbolic Plane



This seed pod-like model is a double spiral, and is made by working in laps around the foundation chain **1.** Begin with a line of chain stitch (any number, eg. 17). **2.** Crochet around the line on **both** sides increasing the number of crochet stitches in every row (eg. 1 extra stitch in every 2 stitches). The resulting form is akin to two hyperbolic planes joined at the baseline.



The rate of increase in this example is an extra stitch every 2 stitches, which gives it a very convoluted effect very quickly.

For more images of crocheted hyperbolic forms & variations on patterns visit the IFF's Gallery of Crocheted Hyperbolic Models <http://www.theiff.org/oexhibits/05b.html#>

The Pseudosphere



This model is constructed by starting from a single stitch and crocheting out in a spiral pattern. **1.** Begin with a row of chain stitches. **2.** Crochet a stitch into the first chain from the hook and continue in circular rounds leaving the rest of the chain aside, then increase the number of crochet stitches in each round. In the example above the form increases one stitch into every three stitches



This pseudo-sphere was made by increasing one in every stitch.(ie. 2 stitches in each stitch). It is much more crenellated and compacted than the previous models.

Thank you from *In Stitches*: Claire Conroy, Charlotte Haywood and Michaela Davies.

For further workshop dates, patterns and queries email sydneyreef@gmail.com.

