

National Aeronautics and
Space Administration



ORIGAMI UNIVERSE

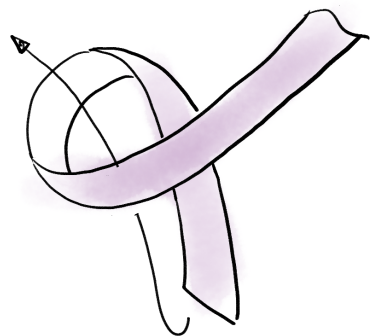
Origami is an ancient Japanese style of paper folding.

However, it is not only a decorative art form. Rather, origami provides solutions to many problems in modern science and engineering. For example, origami-inspired techniques are used to unfold stents in clogged arteries, release airbags during automobile collisions, and even unfurl the large mirror for the soon-to-be-launched James Webb Space Telescope.

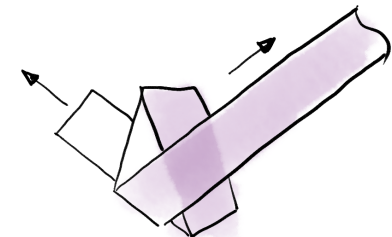
In astrophysics, there are instances where the expansion and unpacking of origami demonstrates what scientists witness. Take the death of stars. When a star about 10 to 15 times more massive than our Sun runs out of nuclear fuel, it will collapse onto itself and then create a giant explosion. This energetic event, known as a supernova, hurls the outer layers of the star into space, creating an elegant tapestry of energy and stellar debris.

NASA's Chandra X-ray Observatory has looked at many of these explosions and the debris fields they leave behind (called "supernova remnants".) On this web site, we will explore how to use origami to understand the death of a massive star and its transformation into its own unique cosmic pattern.

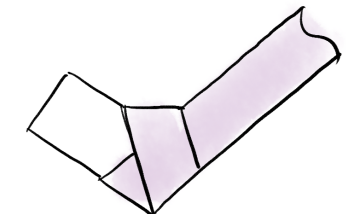
FOLD YOUR OWN STAR!



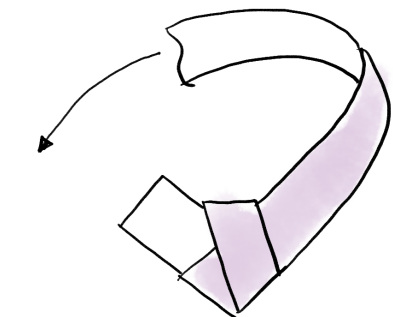
1 Make a loop at one end of the paper. Weave the short end of the paper through the loop.



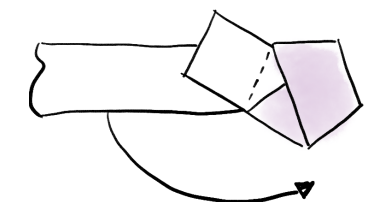
2 Tighten knot and press flat.



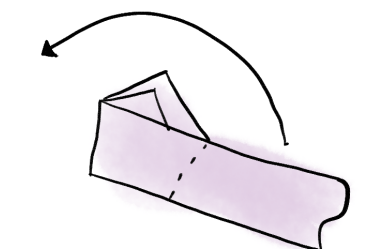
3 Fold short-end of paper down towards center of star. If it is too long, tear off a small piece.



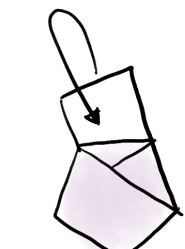
4 Fold long-end of paper up. Make sure edges line up right on top of one another.



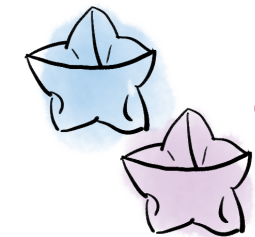
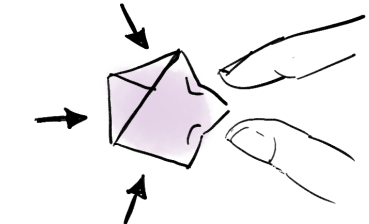
5 Flip paper around so long-end of paper is pointing down again.



6 Fold long-end of paper up and to the left. Make sure edges line up one on top of the other.



7 Flip paper around again so long-end of paper is pointing down.



8 Pinch the sides and puff out your star!



Use this strip of paper to create your star. Cut along the edge to begin!

