Stepped Crystal Snowflake

1. Full-size pattern and 180 mm paper circle

Print at 100% / Actual size. Do not use Fit to page. The gray circle is 180 mm across; use it to prepare the paper. Black is the paper to keep. This page shows the unfolded result.

50 mm at 100% / Actual size

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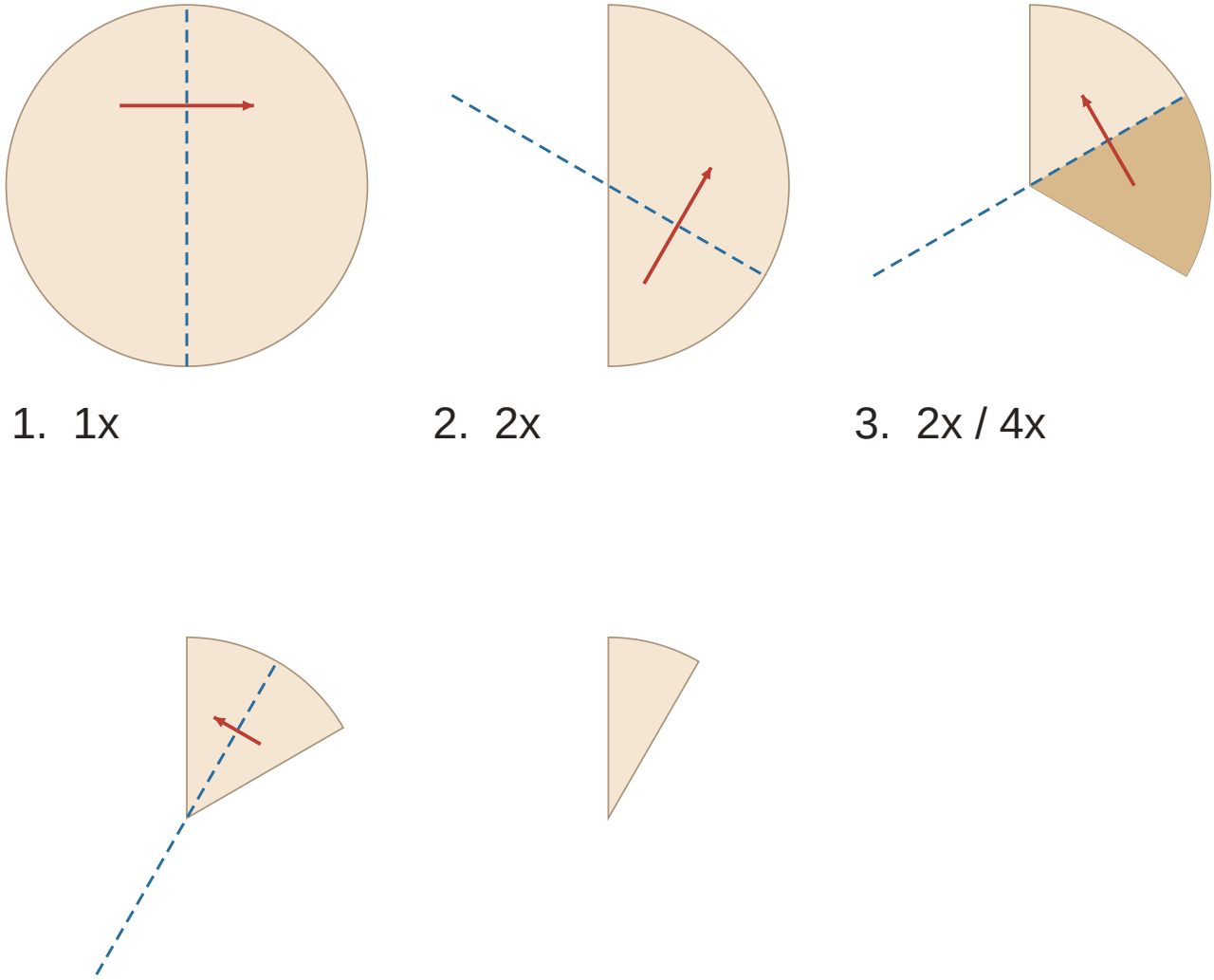
2. Fold the circle into a 30-degree, 12-layer wedge

Start with a 180 mm circle. Fold in half, fold the semicircle in thirds to make a 60-degree sector, then fold that sector in half. The final 30-degree wedge has 12 layers; its pointed tip is the original paper center.



Read left to right, then the next row. Arrows show the fold motion. Blue dashes mark fold locations. In panel 3 the light region has 2 layers and the darker overlap has 4. The final panel has 12 aligned layers.

Keep the original circle center as the pointed tip throughout. Press each fold accurately before cutting; uneven thirds will make unequal arms.

Free template — chinesepapercut.com/templates/snowflake-stepped-crystal/

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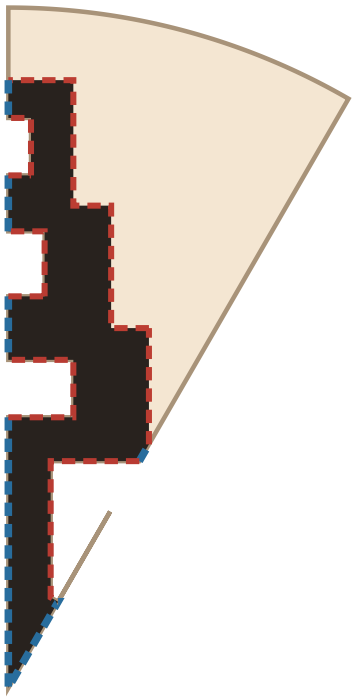
3. Full-size folded cutting guide - same scale as page 1

Keep the black paper. Remove the tan spare paper along the red contours. Blue dashes locate folded edges; never cut along those blue marks.



Cut the small marked openings before the outside edge. An opening that reaches a folded edge can be started there; an enclosed opening needs an adult using a craft knife on a cutting mat. Turn carefully at the right-angle steps and leave the window side rails intact.

Follow the red outside contour while retaining the black paper. Turn carefully at the right-angle steps and leave the window side rails intact. Blue dashed marks locate folded edges; do not cut along them. Support the stack and turn the paper for corners.

50 mm at 100% / Actual size

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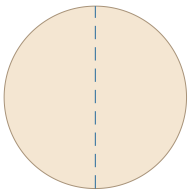
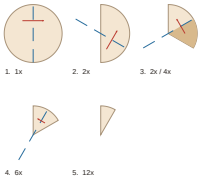
4. Cutting order, opening and finishing



1. Prepare the circle

Print the matching PDF at 100% and check the 50 mm line. Cut a 180 mm circle from thin paper using the gray outline on page 1. Mark its center lightly; it will become the pointed end of every fold.



2. Fold to a 30-degree wedge

Fold the circle in half. Divide the semicircle into three equal 60-degree sectors and fold both sides inward. Fold the resulting 60-degree stack in half once more. Keep all 12 layers aligned; the rounded edge is away from the center. Align the center tip and both folded edges with the full-size guide on PDF page 3, then trace its cutting contours.

3. Cut the inner openings

Cut the small marked openings before the outside edge. An opening that reaches a folded edge can be started there; an enclosed opening needs an adult using a craft knife on a cutting mat. Turn carefully at the right-angle steps and leave the window side rails intact.

4. Cut the outside silhouette

Follow the red outside contour while retaining the black paper. Turn carefully at the right-angle steps and leave the window side rails intact. Blue dashed marks locate folded edges; do not cut along them. Support the stack and turn the paper for corners.

5. Open the layers gently

Separate the last fold first, then open the thirds and finally the semicircle. Support the center and release each branch without pulling on its tip. The 30-degree cut unit repeats by reflection to make six matching arms.

6. Flatten and display

Lay stepped crystal snowflake between clean sheets under a book. Use small removable tape tabs on broad areas for a window display, or mount it flat on a contrasting card. Save the SVG if you want to edit the geometry.

Difficulty: Advanced. Reviewed from the printable outline: openings, narrow bridges, turns and repeated detail. Not a physical trial. Planning estimate; no timed physical trial yet.