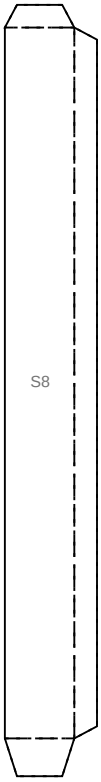
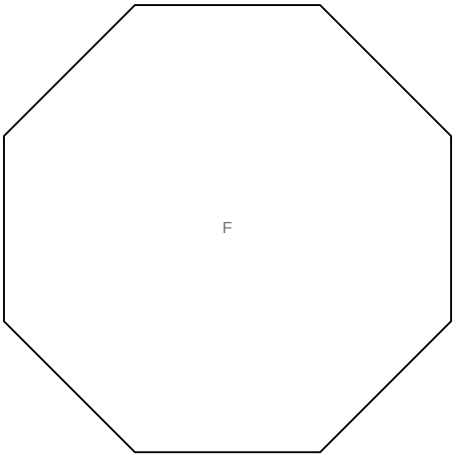
Radial-Gill Mushroom

mushroom / 1.0.0 / A4 / Template page 1

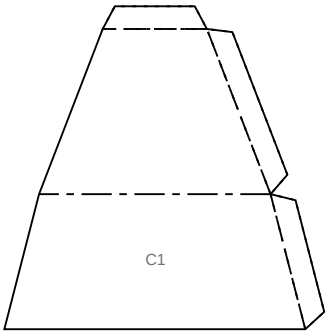
S8 | cut 1
12.18 x 102.00 mm



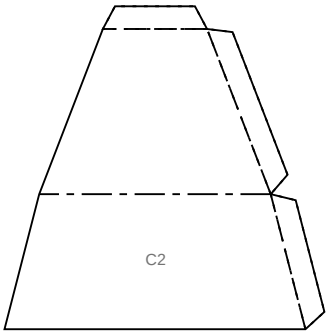
F | cut 1
59.13 x 59.13 mm



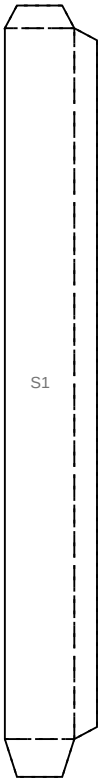
C1 | cut 1
42.31 x 42.70 mm



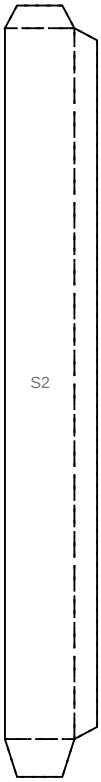
C2 | cut 1
42.31 x 42.70 mm



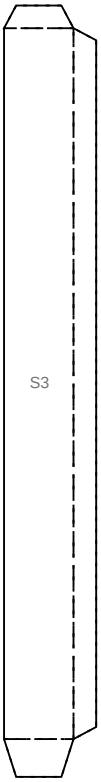
S1 | cut 1
12.18 x 102.00 mm



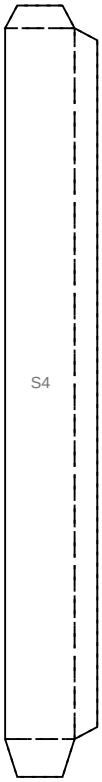
S2 | cut 1
12.18 x 102.00 mm



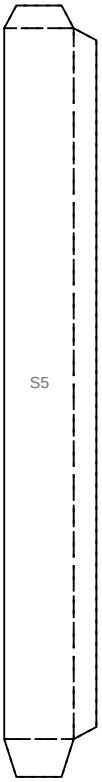
S3 | cut 1
12.18 x 102.00 mm



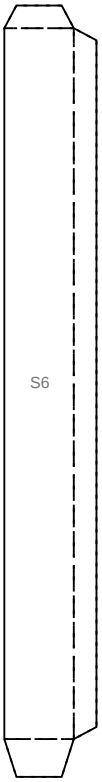
S4 | cut 1
12.18 x 102.00 mm



S5 | cut 1
12.18 x 102.00 mm



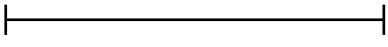
S6 | cut 1
12.18 x 102.00 mm



S7 | cut 1
12.18 x 102.00 mm



Solid: cut | Dashed: valley | Dash-dot: mountain | Dotted: glue



50 mm calibration

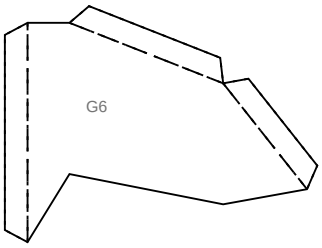
Print at 100% / Actual size. Do not fit to page. Original paper craft template.

snipfold.com/work/mushroom

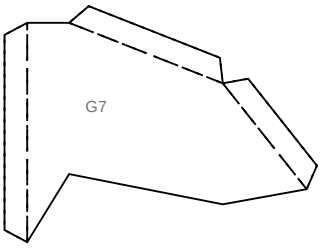
Radial-Gill Mushroom

mushroom / 1.0.0 / A4 / Template page 2

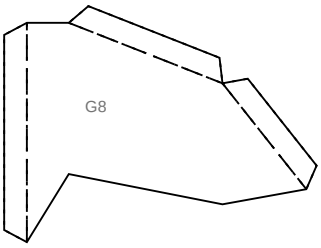
G6 | cut 1
41.31 x 31.21 mm



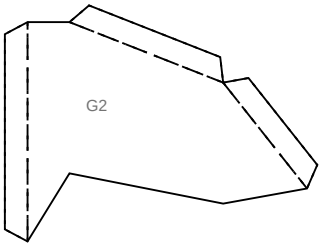
G7 | cut 1
41.31 x 31.21 mm



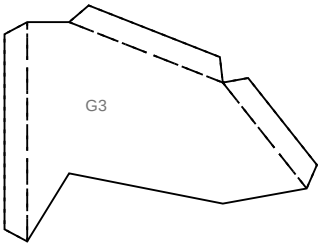
G8 | cut 1
41.31 x 31.21 mm



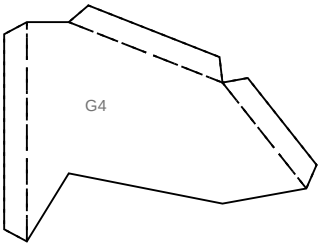
G2 | cut 1
41.31 x 31.21 mm



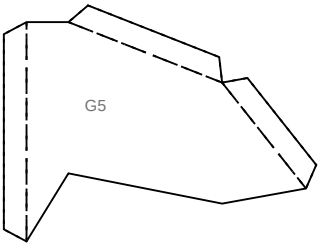
G3 | cut 1
41.31 x 31.21 mm



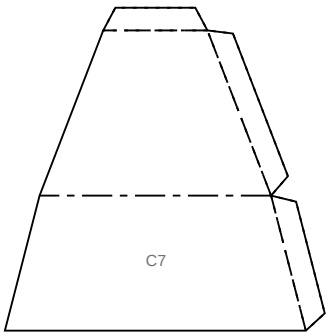
G4 | cut 1
41.31 x 31.21 mm



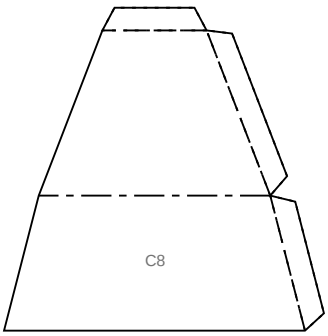
G5 | cut 1
41.31 x 31.21 mm



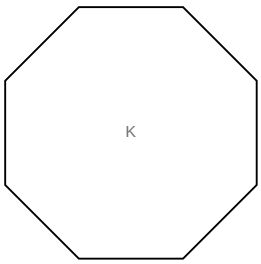
C7 | cut 1
42.31 x 42.70 mm



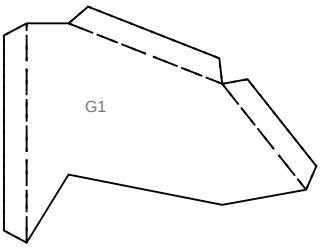
C8 | cut 1
42.31 x 42.70 mm



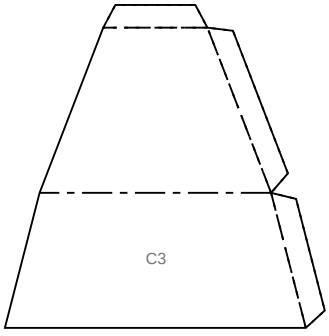
K | cut 1
33.26 x 33.26 mm



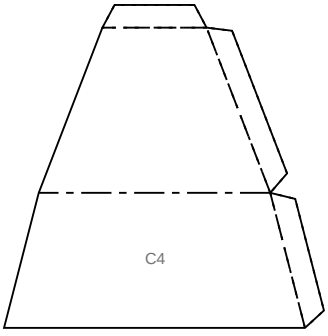
G1 | cut 1
41.31 x 31.21 mm



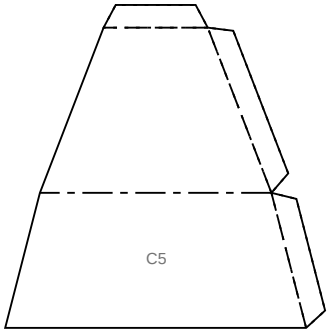
C3 | cut 1
42.31 x 42.70 mm



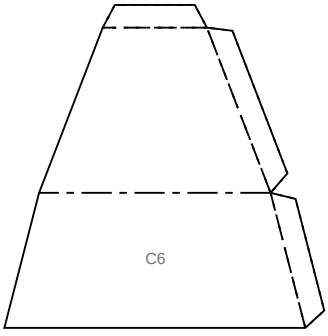
C4 | cut 1
42.31 x 42.70 mm



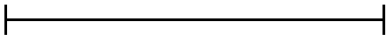
C5 | cut 1
42.31 x 42.70 mm



C6 | cut 1
42.31 x 42.70 mm



Solid: cut | Dashed: valley | Dash-dot: mountain | Dotted: glue



50 mm calibration

Print at 100% / Actual size. Do not fit to page. Original paper craft template.

snipfold.com/work/mushroom

Radial-Gill Mushroom

mushroom / 1.0.0 / A4 / Assembly instructions

Finished size: 96.09 x 96.09 x 94 mm; cap 104 mm across opposite vertices; foot 64 mm across vertices

Materials: 180-220 gsm cardstock for all 26 pieces; Printer and A4 or US Letter paper; Scissors or craft knife with cutting mat; Scoring tool and metal ruler; Pencil for measured assembly guides; PVA paper glue; Narrow blunt tool or tweezers for pressing seams

Step-by-step guide with a 3D model: https://snipfold.com/work/mushroom. Not yet test-built in paper by SnipFold: measurements come from the digital model, so check the fit as you go.

Original 26-piece construction: eight two-tier cap sectors, one crown, eight radial structural gills, eight stalk walls and one foot. All tabs belong to these pieces and appear in both mesh and template.

Every face has exact flat correspondence and rigid-face edge-length checking. Cap tiers are planar trapezoids, not a smooth dome, spherical unfolding or cone-party-hat construction.

The eight enlarged gills are deliberately sparse structural webs, not a botanical reproduction of fine mushroom lamellae. They reach down to 65 mm at the stalk and support the cap along its sloping midlines.

Cap circumradius is 52 mm, shoulder radius 40 mm and crown radius 18 mm; heights are 72, 86 and 94 mm. Stalk circumradius is 12 mm. Shared radii and planes determine all receiving tabs without stretching.

Meshes have zero paper thickness. Intended glued overlaps are coplanar; glue thickness, cardstock compression, springback and tip resistance are not simulated. No concealed wire, ballast, filler or extra paper is used.

The broad foot is intended for a level indoor display, not a guaranteed tip-proof toy. The tall hollow stalk and 3 mm glue tabs require careful scoring and drying; natural paper variation may affect fit.

Part inventory (cut each instance once):

F: Broad octagonal foot

S1: Hollow stalk side 1

S2: Hollow stalk side 2

S3: Hollow stalk side 3

S4: Hollow stalk side 4

S5: Hollow stalk side 5

S6: Hollow stalk side 6

S7: Hollow stalk side 7

S8: Hollow stalk side 8

G1: Radial gill 1

G2: Radial gill 2

G3: Radial gill 3

G4: Radial gill 4

G5: Radial gill 5

G6: Radial gill 6

G7: Radial gill 7

G8: Radial gill 8

C1: Two-tier umbrella sector 1

C2: Two-tier umbrella sector 2

C3: Two-tier umbrella sector 3

C4: Two-tier umbrella sector 4

C5: Two-tier umbrella sector 5

C6: Two-tier umbrella sector 6

C7: Two-tier umbrella sector 7

C8: Two-tier umbrella sector 8

K: Flat octagonal crown

1. Print, cut and score [F, S1, S2, S3, S4, S5, S6, S7, S8, G1, G2, G3, G4, G5, G6, G7, G8, C1, C2, C3, C4, C5, C6, C7, C8, K]: Print at 100% actual size; measure the 50 mm ruler. Cut all 26 pieces on solid outlines, retaining every tapered tab. Score dashed and dash-dot lines. Dotted regions are glue tabs. Transfer IDs lightly to the reverse before separating pieces. Keep the eight sets in order.

2. Mark assembly guides [F, S1, S2, S3, S4, S5, S6, S7, S8, C1, C2, C3, C4, C5, C6, C7, C8]: On foot F draw light centerlines between opposite vertices. Mark the concentric stalk octagon with its eight vertices 12 mm from the center, aligned with the foot vertices (32 mm radius). Mark each stalk side halfway across its 9.18 mm width, from 65 to 94 mm above its lower fold. On the reverse of each cap sector mark midpoints of the 39.80 mm rim, 30.61 mm shoulder and 13.78 mm crown edges; connect these as the gill centerline. These pencil guides are not cuts.

3. Assemble the hollow stalk [S1, S2, S3, S4, S5, S6, S7, S8]: Join S1-S8 cyclically into an open octagonal stalk, 94 mm tall and 24 mm across opposite vertices (22.17 mm across flats). Bend each long 3 mm tab inward through 45 degrees and glue behind the following side; S8 closes behind S1. Match top and bottom fold lines, not tab tips. Press with a blunt tool through the open ends. Fold bottom 5 mm feet outward 90 degrees and top 3 mm tabs inward 90 degrees. The stalk stays hollow; no filler or hidden rod is needed.

4. Mount the stalk on its foot [F, S1, S2, S3, S4, S5, S6, S7, S8]: Align all eight bottom wall edges with the marked 12 mm-radius octagon on F. Glue the eight outward 5 mm tabs flat onto F. The wall starts at desk height and the tabs reach about 16.09 mm from the center at each side midpoint. Hold square with a ruler and dry completely on a level surface before fitting the projecting gills. The 64 mm vertex-to-vertex foot remains visible.

5. Attach radial gill 1 [G1, S1]: Fold the straight inner tab of G1 90 degrees to lie on S1. Position its 29 mm inner fold exactly on the side midpoint guide, from 65 to 94 mm above F. Glue the 3 mm tab to the stalk face, turning it toward the next side in the numbered sequence. The fin projects radially outward, perpendicular to the stalk face; its tip is 48.04 mm from the center and 72 mm above F. Fold the two sloping 3 mm top tabs 90 degrees toward the same circumferential direction, ready to lie under the cap. Leave the short horizontal top edge bare. Hold the fin square and let this joint set.

6. Attach radial gill 2 [G2, S2]: Fold the straight inner tab of G2 90 degrees to lie on S2. Position its 29 mm inner fold exactly on the side midpoint guide, from 65 to 94 mm above F. Glue the 3 mm tab to the stalk face, turning it toward the next side in the numbered sequence. The fin projects radially outward, perpendicular to the stalk face; its tip is 48.04 mm from the center and 72 mm above F. Fold the two sloping 3 mm top tabs 90 degrees toward the same circumferential direction, ready to lie under the cap. Leave the short horizontal top edge bare. Hold the fin square and let this joint set.

7. Attach radial gill 3 [G3, S3]: Fold the straight inner tab of G3 90 degrees to lie on S3. Position its 29 mm inner fold exactly on the side midpoint guide, from 65 to 94 mm above F. Glue the 3 mm tab to the stalk face, turning it toward the next side in the numbered sequence. The fin projects radially outward, perpendicular to the stalk face; its tip is 48.04 mm from the center and 72 mm above F. Fold the two sloping 3 mm top tabs 90 degrees toward the same circumferential direction, ready to lie under the cap. Leave the short horizontal top edge bare. Hold the fin square and let this joint set.

8. Attach radial gill 4 [G4, S4]: Fold the straight inner tab of G4 90 degrees to lie on S4. Position its 29 mm inner fold exactly on the side midpoint guide, from 65 to 94 mm above F. Glue the 3 mm tab to the stalk face, turning it toward the next side in the numbered sequence. The fin projects radially outward, perpendicular to the stalk face; its tip is 48.04 mm from the center and 72 mm above F. Fold the two sloping 3 mm top tabs 90 degrees toward the same circumferential direction, ready to lie under the cap. Leave the

short horizontal top edge bare. Hold the fin square and let this joint set.

9. Attach radial gill 5 [G5, S5]: Fold the straight inner tab of G5 90 degrees to lie on S5. Position its 29 mm inner fold exactly on the side midpoint guide, from 65 to 94 mm above F. Glue the 3 mm tab to the stalk face, turning it toward the next side in the numbered sequence. The fin projects radially outward, perpendicular to the stalk face; its tip is 48.04 mm from the center and 72 mm above F. Fold the two sloping 3 mm top tabs 90 degrees toward the same circumferential direction, ready to lie under the cap. Leave the short horizontal top edge bare. Hold the fin square and let this joint set.

10. Attach radial gill 6 [G6, S6]: Fold the straight inner tab of G6 90 degrees to lie on S6. Position its 29 mm inner fold exactly on the side midpoint guide, from 65 to 94 mm above F. Glue the 3 mm tab to the stalk face, turning it toward the next side in the numbered sequence. The fin projects radially outward, perpendicular to the stalk face; its tip is 48.04 mm from the center and 72 mm above F. Fold the two sloping 3 mm top tabs 90 degrees toward the same circumferential direction, ready to lie under the cap. Leave the short horizontal top edge bare. Hold the fin square and let this joint set.

11. Attach radial gill 7 [G7, S7]: Fold the straight inner tab of G7 90 degrees to lie on S7. Position its 29 mm inner fold exactly on the side midpoint guide, from 65 to 94 mm above F. Glue the 3 mm tab to the stalk face, turning it toward the next side in the numbered sequence. The fin projects radially outward, perpendicular to the stalk face; its tip is 48.04 mm from the center and 72 mm above F. Fold the two sloping 3 mm top tabs 90 degrees toward the same circumferential direction, ready to lie under the cap. Leave the short horizontal top edge bare. Hold the fin square and let this joint set.

12. Attach radial gill 8 [G8, S8]: Fold the straight inner tab of G8 90 degrees to lie on S8. Position its 29 mm inner fold exactly on the side midpoint guide, from 65 to 94 mm above F. Glue the 3 mm tab to the stalk face, turning it toward the next side in the numbered sequence. The fin projects radially outward, perpendicular to the stalk face; its tip is 48.04 mm from the center and 72 mm above F. Fold the two sloping 3 mm top tabs 90 degrees toward the same circumferential direction, ready to lie under the cap. Leave the short horizontal top edge bare. Hold the fin square and let this joint set.

13. Form the umbrella sectors [C1, C2, C3, C4, C5, C6, C7, C8]: Each C piece has two planar trapezoids. Bend the shoulder mountain fold so the outer tier slopes down 51.62 degrees from horizontal and the inner tier slopes down 21.49 degrees; the change at the shoulder is about 30.13 degrees. Do not curl the facets. Fold the two right-side 3 mm seam tabs underneath the next sector and the inner 3 mm tab horizontal toward the center. Dry-fit against the gill profile: rim height 72 mm, shoulder 86 mm, crown 94 mm. The gills, rather than a pointed cone apex, establish the cap shape.

14. Fit umbrella sector 1 [C1, G1]: Seat C1 over G1: align the three reverse-side midpoint marks with the gill profile. Glue both 3 mm sloping gill tabs to the underside of their matching trapezoids, working from shoulder outward. Press the tabs from below through the open underside; keep the gill vertical. Keep its right seam tabs accessible for the next sector. Let the seams set before proceeding; the crown is still open.

15. Fit umbrella sector 2 [C2, G2, C1]: Seat C2 over G2: align the three reverse-side midpoint marks with the gill profile. Glue both 3 mm sloping gill tabs to the underside of their matching trapezoids, working from shoulder outward. Press the tabs from below through the open underside; keep the gill vertical. Glue the left edge of C2 onto the two right seam tabs of C1, aligning rim, shoulder and crown vertices with zero edge overlap. Keep its right seam tabs accessible for the next sector. Let the seams set before proceeding; the crown is still open.

16. Fit umbrella sector 3 [C3, G3, C2]: Seat C3 over G3: align the three reverse-side midpoint marks with the gill profile. Glue both 3 mm sloping gill tabs to the underside of their matching trapezoids, working from shoulder outward. Press the tabs from below through the open underside; keep the gill vertical. Glue the left edge of C3 onto the two right seam tabs of C2, aligning rim, shoulder and crown vertices with zero edge overlap. Keep its right seam tabs accessible for the next sector. Let the seams set before proceeding; the crown is still open.

17. Fit umbrella sector 4 [C4, G4, C3]: Seat C4 over G4: align the three reverse-side midpoint marks with the gill profile. Glue both 3 mm sloping gill tabs to the underside of their matching trapezoids, working from shoulder outward. Press the tabs from below through the open underside; keep the gill vertical. Glue the left edge of C4 onto the two right seam tabs of C3, aligning rim, shoulder and crown vertices with zero edge overlap. Keep its right seam tabs accessible for the next sector. Let the seams set before proceeding; the crown is still open.

18. Fit umbrella sector 5 [C5, G5, C4]: Seat C5 over G5: align the three reverse-side midpoint marks with the gill profile. Glue both 3 mm sloping gill tabs to the underside of their matching trapezoids, working from shoulder outward. Press the tabs from below through the open underside; keep the gill vertical. Glue the left edge of C5 onto the two right seam tabs of C4, aligning rim, shoulder and crown vertices with zero edge overlap. Keep its right seam tabs accessible for the next sector. Let the seams set before

proceeding; the crown is still open.

19. Fit umbrella sector 6 [C6, G6, C5]: Seat C6 over G6: align the three reverse-side midpoint marks with the gill profile. Glue both 3 mm sloping gill tabs to the underside of their matching trapezoids, working from shoulder outward. Press the tabs from below through the open underside; keep the gill vertical. Glue the left edge of C6 onto the two right seam tabs of C5, aligning rim, shoulder and crown vertices with zero edge overlap. Keep its right seam tabs accessible for the next sector. Let the seams set before proceeding; the crown is still open.

20. Fit umbrella sector 7 [C7, G7, C6]: Seat C7 over G7: align the three reverse-side midpoint marks with the gill profile. Glue both 3 mm sloping gill tabs to the underside of their matching trapezoids, working from shoulder outward. Press the tabs from below through the open underside; keep the gill vertical. Glue the left edge of C7 onto the two right seam tabs of C6, aligning rim, shoulder and crown vertices with zero edge overlap. Keep its right seam tabs accessible for the next sector. Let the seams set before proceeding; the crown is still open.

21. Fit umbrella sector 8 [C8, G8, C7, C1]: Seat C8 over G8: align the three reverse-side midpoint marks with the gill profile. Glue both 3 mm sloping gill tabs to the underside of their matching trapezoids, working from shoulder outward. Press the tabs from below through the open underside; keep the gill vertical. Glue the left edge of C8 onto the two right seam tabs of C7, aligning rim, shoulder and crown vertices with zero edge overlap. Tuck the right tabs of C8 underneath C1 to close the ring. Press these last seams through the still-open 36 mm crown aperture and from below. Let the seams set before proceeding; the crown is still open.

22. Close the flat crown [K, C1, C2, C3, C4, C5, C6, C7, C8, S1, S2, S3, S4, S5, S6, S7, S8]: Dry-fit K at height 94 mm. Its eight 13.78 mm edges meet the inner cap edges; its vertices are 18 mm from the center. Apply a thin film of glue to the upward faces of the eight cap inner tabs and eight stalk top tabs. Lower K flat onto them, matching its vertices to the cap seams. Press gently over the stalk perimeter and around the crown edge while supporting the adjacent cap from below. The short bare gill top edges contact K as supports but are not relied upon as edge-only glue joints. Dry on the foot without weighting the cap.

23. Dry and display [F, K]: Check that all eight gills remain radial, the cap has a level eight-sided rim, and F rests flat without rocking. Leave glue to cure fully. This is a lightweight static ornament for a level indoor surface; hold the foot or stalk rather than the cap.