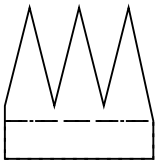
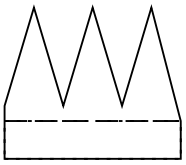
Faceted Spine Hedgehog

hedgehog / 1.0.0 / A4 / Template page 1

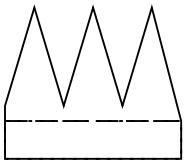
S11 | cut 1
19.63 x 20.00 mm



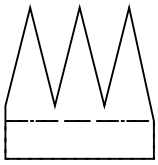
S12 | cut 1
23.30 x 20.00 mm



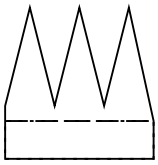
S13 | cut 1
23.30 x 20.00 mm



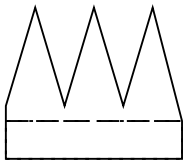
S14 | cut 1
19.63 x 20.00 mm



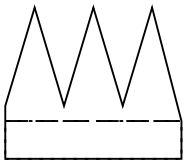
S21 | cut 1
19.63 x 20.00 mm



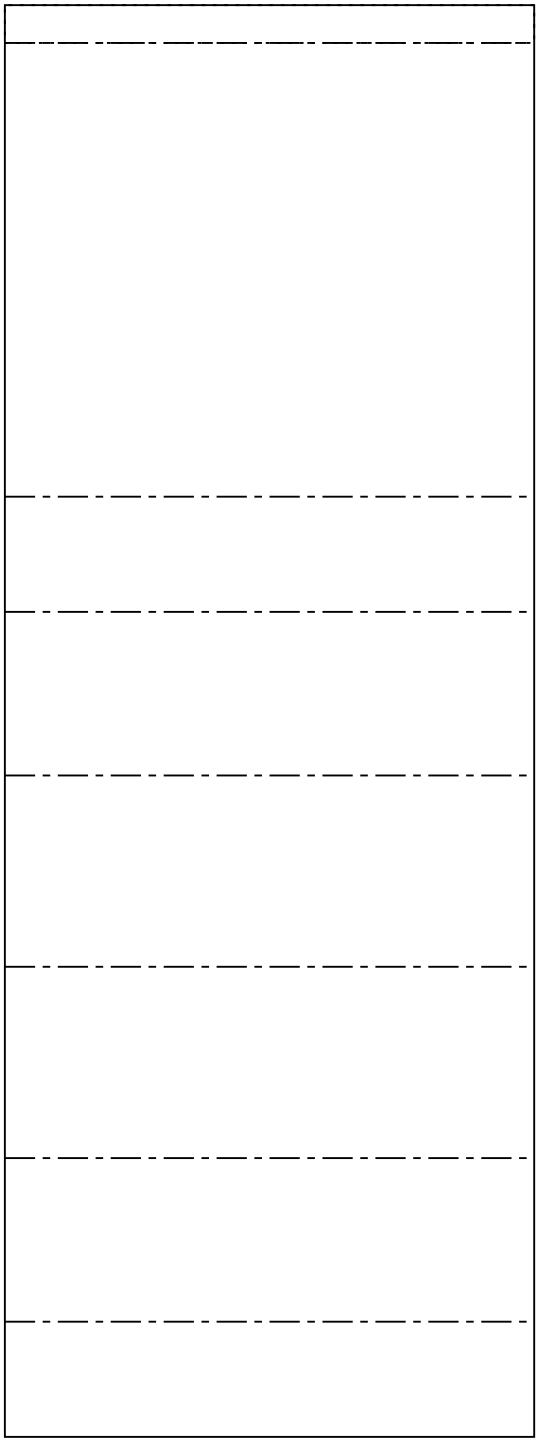
S22 | cut 1
23.30 x 20.00 mm



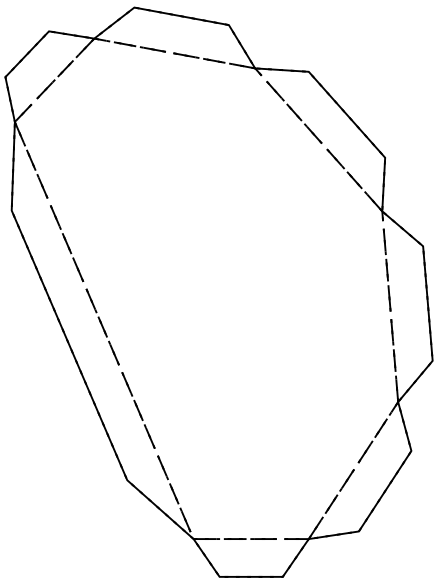
S23 | cut 1
23.30 x 20.00 mm



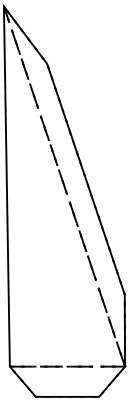
B | cut 1
70.00 x 189.33 mm



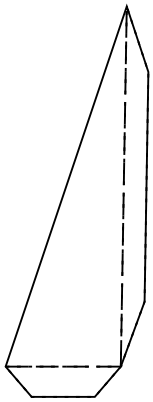
R | cut 1
56.50 x 75.28 mm



M1 | cut 1
16.02 x 51.63 mm



M6 | cut 1
18.88 x 51.63 mm



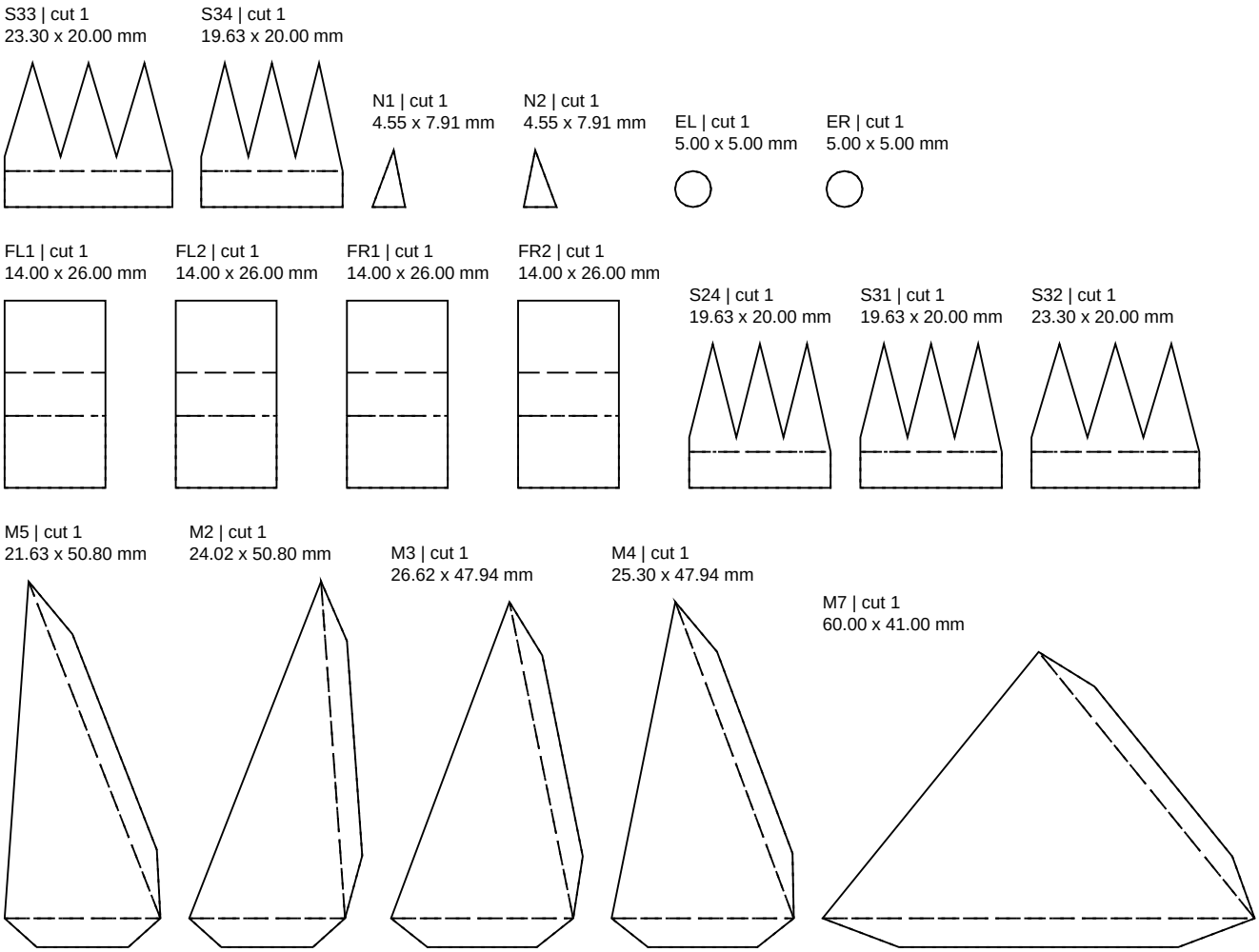
Solid: cut | Dashed: valley | Dash-dot: mountain | Dotted: glue

50 mm calibration

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

Faceted Spine Hedgehog

hedgehog / 1.0.0 / A4 / Template page 2



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.

Faceted Spine Hedgehog

hedgehog / 1.0.0 / A4 / Assembly instructions

Finished size: 105 x approximately 88 x 57 mm

Materials: 180-200 gsm cardstock for shell and feet; 120-160 gsm paper for spines and details; Scissors; Scoring tool and ruler; PVA glue

Original dimensional paper sculpture with exact piecewise-rigid template correspondence.

All tabs, root pads and nose/eye patches contact their named receiving faces. Paper and glue thickness are idealized as zero; overlapping glued layers share a plane.

The 55 degree spine lift is a hand-set target, not a locking mechanism. No smooth curvature, stretching, internal wire or hidden support is assumed.

Physical printing, cutting, folding, stability and assembly validation are deferred.

Part inventory (cut each instance once):

B: Seven facet body

R: Rear closure

M1: Muzzle facet 1

M2: Muzzle facet 2

M3: Muzzle facet 3

M4: Muzzle facet 4

M5: Muzzle facet 5

M6: Muzzle facet 6

M7: Muzzle facet 7

FL1: Folded foot

FL2: Folded foot

FR1: Folded foot

FR2: Folded foot

S11: Row 1 spine comb 1

S12: Row 1 spine comb 2

S13: Row 1 spine comb 3

S14: Row 1 spine comb 4

S21: Row 2 spine comb 1

S22: Row 2 spine comb 2

S23: Row 2 spine comb 3

S24: Row 2 spine comb 4

S31: Row 3 spine comb 1

S32: Row 3 spine comb 2

S33: Row 3 spine comb 3

Faceted Spine Hedgehog

hedgehog / 1.0.0 / A4 / Assembly instructions continued

S34: Row 3 spine comb 4

EL: L eye

ER: R eye

N1: Black nose facet

N2: Black nose facet

1. Cut and score [B]: Print at 100%; confirm the 50 mm ruler. Cut one of every ID. Score all fold lines before forming. Use 180-200 gsm card for the shell and feet, 120-160 gsm for the spine combs. The body axis is 70 mm long; its front is the pointed muzzle end.

2. Fold the low barrel [B]: Wrap B with the seven facets outside and its 60 mm-wide belly flat. In profile, from the seam, the successive (sideways, height) vertices in mm are (-30,6), (-36,20), (-24,38), (0,46), (24,38), (36,20), (30,6). These give a 72 mm maximum width and 40 mm rise above the belly. Mountain-fold around the profile; glue the final 5 mm lap under the first 15.23 mm facet. Align both 70 mm ends and let the seam set before capping.

3. Close the rump [R]: Fold all seven R tabs 90 degrees toward the open body. Insert them 5 mm inside the rear opening, glue each to its matching B facet and hold the cap flush with the rear edge. The long straight cap edge matches the 60 mm belly. Allow to dry with the front still open.

4. Build the pointed muzzle [M1, M2, M3, M4, M5, M6, M7]: M1 through M7 follow the same profile order as B, starting at the lower left seam. The tab along each short base edge folds backward into B with 4 mm contact. The other 3 mm tab on M1 goes under M2, M2 under M3, continuing to M7 under M1. First join the seven long seams into a hollow pointed cap, leaving its rear open for finger access. Keep all seven points coincident; the nose must project 35 mm forward of its base and sit 12 mm above the belly. Let the long seams set, then seat all seven base tabs inside the front of B and glue flush.

5. Make four supporting feet [FL1, FL2, FR1, FR2]: Each foot has a 10 mm root pad, 6 mm vertical leg and 10 mm toe. Fold both creases 90 degrees in opposite directions to make a shallow Z. Glue the root pads beneath the belly, facing inward. Place the rear pair 15 mm from the rear body edge and the front pair 50 mm from it; each is 14 mm long. Leg folds are 24 mm left/right of the centerline. Toes point outward to 34 mm. Hold all four toes on a flat table while drying: the belly is 6 mm above the table.

6. Attach spine row 1 [S11, S12, S13, S14]: Use S11, S12, S13, S14 on the four upper B facets, in left-to-right order. Position each comb hinge 15 mm forward from the rear body edge. Its 5 mm-wide base band lies forward of the hinge and is glued fully to B; leave a 1 mm gap at both transverse facet edges. Fold the three-tooth flap outward 55 degrees from the body surface, with its points leaning toward the rump. Do not glue the teeth. Each tooth rises from a 15 mm flap. Let this row set before adding the next; keep all four combs off the muzzle.

7. Attach spine row 2 [S21, S22, S23, S24]: Use S21, S22, S23, S24 on the four upper B facets, in left-to-right order. Position each comb hinge 33 mm forward from the rear body edge. Its 5 mm-wide base band lies forward of the hinge and is glued fully to B; leave a 1 mm gap at both transverse facet edges. Fold the three-tooth flap outward 55 degrees from the body surface, with its points leaning toward the rump. Do not glue the teeth. Each tooth rises from a 15 mm flap. Let this row set before adding the next; keep all four combs off the muzzle.

8. Attach spine row 3 [S31, S32, S33, S34]: Use S31, S32, S33, S34 on the four upper B facets, in left-to-right order. Position each comb hinge 51 mm forward from the rear body edge. Its 5 mm-wide base band lies forward of the hinge and is glued fully to B; leave a 1 mm gap at both transverse facet edges. Fold the three-tooth flap outward 55 degrees from the body surface, with its points leaning toward the rump. Do not glue the teeth. Each tooth rises from a 15 mm flap. Let this row set before adding the next; keep all four combs off the muzzle.

9. Add the eyes [EL, ER]: Glue the two 5 mm eyes flat to M2 and M5. On each triangular facet, locate the point 40% along its base edge in profile order, then move one quarter of the way toward the nose point (approximately 9 mm forward of the body). Center an eye there. Keep the facets flat.

10. Finish the nose and dry [N1, N2]: Glue N1 onto the tip of M3 and N2 onto M4, matching all three triangle corners. These black patches cover the final 18% of the two upper muzzle facets and meet exactly at the ridge. Keep the foot soles flat and allow the shell and spine roots to dry fully. Finished shell and muzzle length is 105 mm; body width is 72 mm. Raised spines span about 88 mm across and reach about 57 mm high. Physical printing and assembly remain pending.