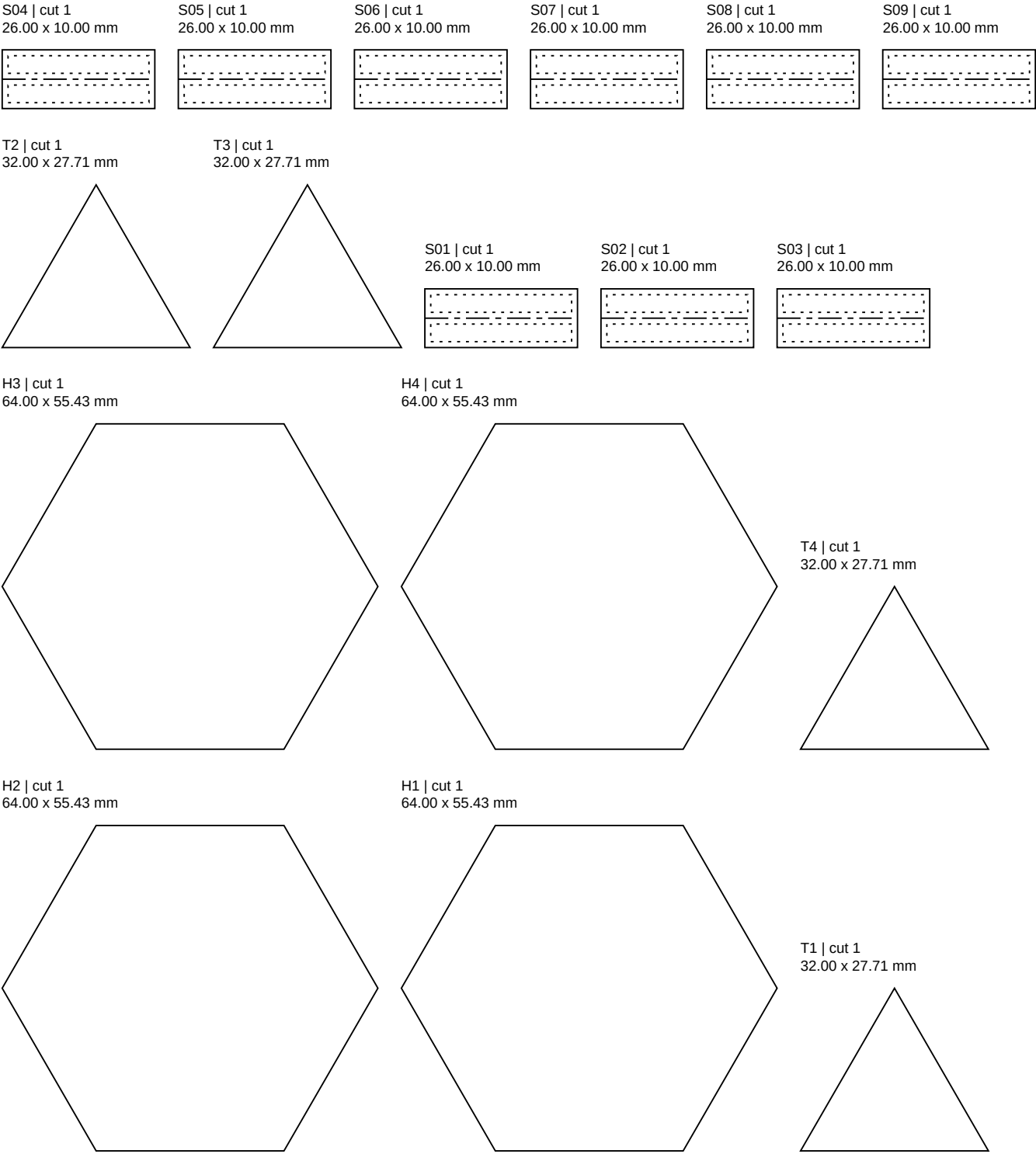
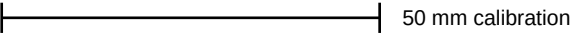


Truncated Tetrahedron

truncated-tetrahedron / 1.0.0 / Letter / Template page 1



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

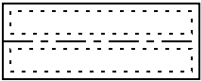


Print at 100% / Actual size. Do not fit to page. Original paper craft template.

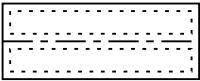
Truncated Tetrahedron

truncated-tetrahedron / 1.0.0 / Letter / Template page 2

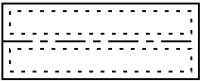
S16 | cut 1
26.00 x 10.00 mm



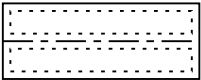
S17 | cut 1
26.00 x 10.00 mm



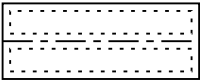
S18 | cut 1
26.00 x 10.00 mm



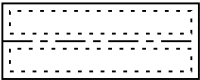
S10 | cut 1
26.00 x 10.00 mm



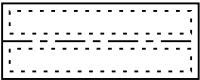
S11 | cut 1
26.00 x 10.00 mm



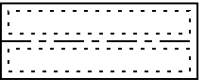
S12 | cut 1
26.00 x 10.00 mm



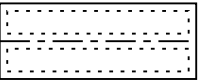
S13 | cut 1
26.00 x 10.00 mm



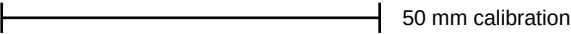
S14 | cut 1
26.00 x 10.00 mm



S15 | cut 1
26.00 x 10.00 mm



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



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

Truncated Tetrahedron

truncated-tetrahedron / 1.0.0 / Letter / Assembly instructions

Finished size: 67.88 x 67.88 x 67.88 mm; edge 32 mm

Materials: 160-180 gsm paper; Scissors; Scoring tool and ruler; PVA glue; Pencil; Protractor

Original analytic one-third truncation of a regular tetrahedron: 12 vertices, 18 equal 32 mm edges, 8 regular faces.

26 cut pieces: 8 face panels and 18 numbered exterior seam tabs. Tab IDs and the seam map in the steps identify every joint.

Exact rigid flat-to-assembled geometry includes both wings of every tab. Exterior tabs deliberately remain visible for accessible closure.

Zero-thickness surface model: glue wings coincide with panel surfaces; paper/glue thickness and springback are not simulated.

Physical printing, cutting and assembly verification pending.

Part inventory (cut each instance once):

T1: Equilateral triangle / 32 mm edges

H1: Regular hexagon / 32 mm edges

T2: Equilateral triangle / 32 mm edges

H2: Regular hexagon / 32 mm edges

T3: Equilateral triangle / 32 mm edges

H3: Regular hexagon / 32 mm edges

T4: Equilateral triangle / 32 mm edges

H4: Regular hexagon / 32 mm edges

S01: T1 e2 to H4 e2; fold 70.529 deg

S02: T1 e1 to H3 e3; fold 70.529 deg

S03: H3 e2 to H4 e3; fold 109.471 deg

S04: T1 e3 to H2 e3; fold 70.529 deg

S05: H2 e4 to H4 e1; fold 109.471 deg

S06: H2 e2 to H3 e4; fold 109.471 deg

S07: T2 e1 to H4 e4; fold 70.529 deg

S08: T2 e2 to H3 e1; fold 70.529 deg

S09: H1 e3 to T2 e3; fold 70.529 deg

S10: H1 e2 to H4 e5; fold 109.471 deg

S11: H1 e4 to H3 e6; fold 109.471 deg

S12: T3 e2 to H4 e6; fold 70.529 deg

S13: H2 e5 to T3 e1; fold 70.529 deg

S14: H1 e1 to T3 e3; fold 70.529 deg

Truncated Tetrahedron

truncated-tetrahedron / 1.0.0 / Letter / Assembly instructions continued

S15: H1 e6 to H2 e6; fold 109.471 deg

S16: H3 e5 to T4 e1; fold 70.529 deg

S17: H2 e1 to T4 e2; fold 70.529 deg

S18: H1 e5 to T4 e3; fold 70.529 deg

1. Cut and identify the panels and seam tabs [T1, H1, T2, H2, T3, H3, T4, H4]: Print at 100%; check the 50 mm ruler. Cut eight panels and 18 separate numbered seam tabs. Transfer every printed part ID lightly to its outside face before removing the scrap. Each panel has its first edge horizontal at the bottom of the template. Label that edge e1, then count counterclockwise around the printed face: e2 rises at the right end of e1. Keep this printed-face orientation outward. Do not crease the panels.
2. Score the numbered exterior tabs [S01, S02, S03, S04, S05, S06, S07, S08, S09, S10, S11, S12, S13, S14, S15, S16, S17, S18]: Score each S tab along its 26 mm centerline. Each wing is 5 mm wide. The printed face stays outside: mountain-fold the seam ridge. Hexagon/hexagon seams turn 109.471 degrees from flat (70.529 degrees internal dihedral); triangle/hexagon seams turn 70.529 degrees (109.471 degrees internal). The crease sits on the panel butt joint; each strip end stops 3 mm short of the panel corner. Glue goes on the underside of both wings, against the exterior panel surfaces.
3. Join the four hexagons [H1, H2, H3, H4, S03, S05, S06, S10, S11, S15]: S03: H3 e2 / H4 e3; S05: H2 e4 / H4 e1; S06: H2 e2 / H3 e4; S10: H1 e2 / H4 e5; S11: H1 e4 / H3 e6; S15: H1 e6 / H2 e6. Butt the matching 32 mm edges without overlap. Center each numbered tab ridge over the joint, with 5 mm of wing on each outside face and 3 mm clearance at both corners. Apply thin PVA to one wing, press and let it grab; then glue the second wing while holding the measured dihedral. Work one seam at a time and let it set before loading the next. Keep all four triangular openings clear while building the shell.
4. Attach triangle T1 [H2, H3, H4, S01, S02, S04, T1]: S01: T1 e2 / H4 e2; S02: T1 e1 / H3 e3; S04: T1 e3 / H2 e3. Butt the matching 32 mm edges without overlap. Center each numbered tab ridge over the joint, with 5 mm of wing on each outside face and 3 mm clearance at both corners. Apply thin PVA to one wing, press and let it grab; then glue the second wing while holding the measured dihedral. Work one seam at a time and let it set before loading the next. Seat the triangle flush, tack its first seam, then attach the other two tabs from outside. All pressing is external, so even the last closure needs no finger or tool trapped inside.
5. Attach triangle T2 [H1, H3, H4, S07, S08, S09, T2]: S07: T2 e1 / H4 e4; S08: T2 e2 / H3 e1; S09: H1 e3 / T2 e3. Butt the matching 32 mm edges without overlap. Center each numbered tab ridge over the joint, with 5 mm of wing on each outside face and 3 mm clearance at both corners. Apply thin PVA to one wing, press and let it grab; then glue the second wing while holding the measured dihedral. Work one seam at a time and let it set before loading the next. Seat the triangle flush, tack its first seam, then attach the other two tabs from outside. All pressing is external, so even the last closure needs no finger or tool trapped inside.
6. Attach triangle T3 [H1, H2, H4, S12, S13, S14, T3]: S12: T3 e2 / H4 e6; S13: H2 e5 / T3 e1; S14: H1 e1 / T3 e3. Butt the matching 32 mm edges without overlap. Center each numbered tab ridge over the joint, with 5 mm of wing on each outside face and 3 mm clearance at both corners. Apply thin PVA to one wing, press and let it grab; then glue the second wing while holding the measured dihedral. Work one seam at a time and let it set before loading the next. Seat the triangle flush, tack its first seam, then attach the other two tabs from outside. All pressing is external, so even the last closure needs no finger or tool trapped inside.
7. Attach triangle T4 last [H1, H2, H3, S16, S17, S18, T4]: S16: H3 e5 / T4 e1; S17: H2 e1 / T4 e2; S18: H1 e5 / T4 e3. Butt the matching 32 mm edges without overlap. Center each numbered tab ridge over the joint, with 5 mm of wing on each outside face and 3 mm clearance at both corners. Apply thin PVA to one wing, press and let it grab; then glue the second wing while holding the measured dihedral. Work one seam at a time and let it set before loading the next. Seat the triangle flush, tack its first seam, then attach the other two tabs from outside. All pressing is external, so even the last closure needs no finger or tool trapped inside.