

Four Interlocking Triangular Prisms

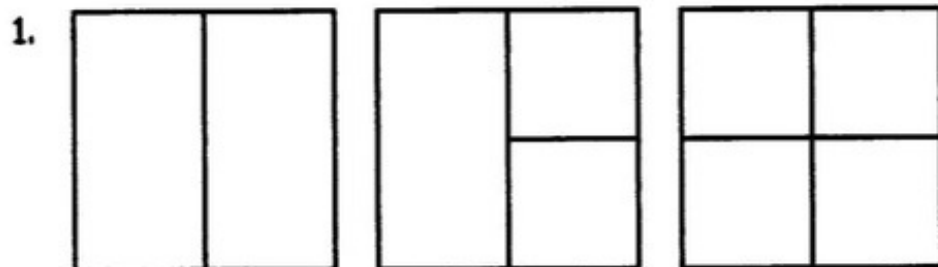
Daniel Kwan

©2002 - New Jersey

Complex

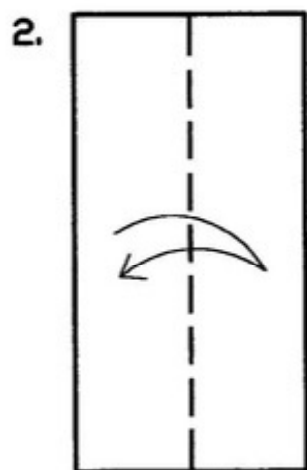
6" paper makes a 5" diameter model

Start with 4 colors, 3 square sheets of each color (12 sheets total)

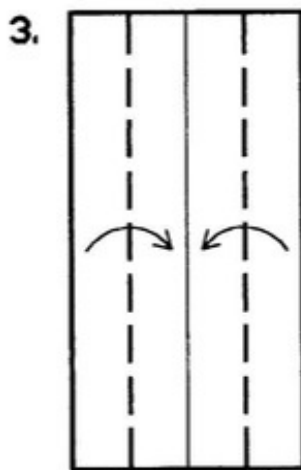


For each color, cut or tear the three squares into three 2 x 1's and six 1 x 1's as shown. None of the torn edges will show on the completed model. The 2 x 1's will be used to make the A units and the 1 x 1's are for the B units.

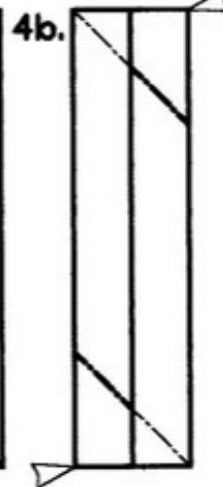
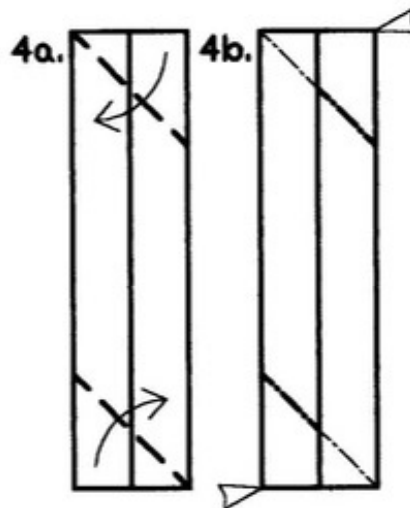
Instructions for A Units from 2 x 1's



Start white side up. Book fold. Unfold.



Fold cupboard doors as shown.

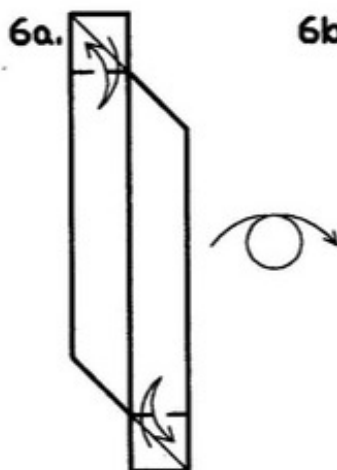


a. Fold opposite corners to bisect the angles in the lower right and upper left corners. Unfold.

b. Inside reverse fold along the creases just made. Keep the corners underneath the cupboard door folds. Leave the small triangle unfolded.



Fold unit in half lengthwise. Unfold.

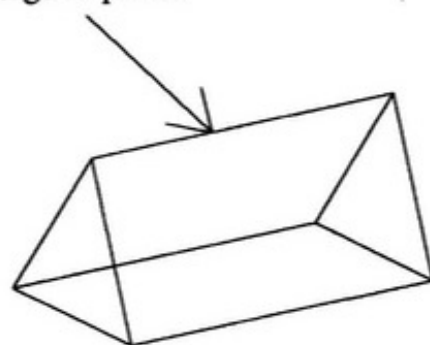


Valley fold the ends of the unit to form square-shaped tabs. Unfold and turn over.



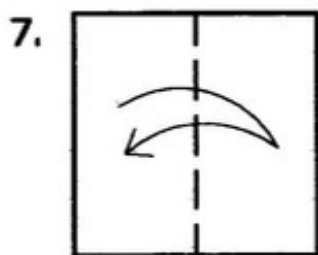
Completed unit A (view of outside of unit). Fold the other eleven.

The A units will become the three parallel long edges of each triangular prism.

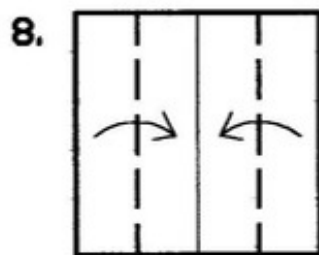


Note: My "Four Interlocking Triangular Prisms" was based on a wooden puzzle.

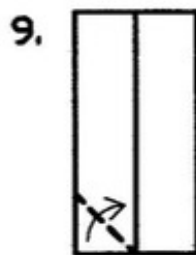
Instructions for B Units from 1 x 1's



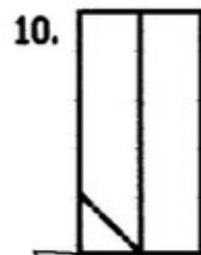
Start white side up.
Book fold. Unfold.



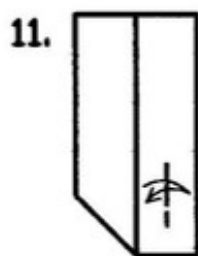
Fold cupboard door folds as shown.



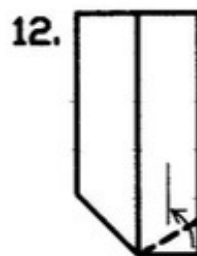
Fold the lower left corner to the center. Unfold.



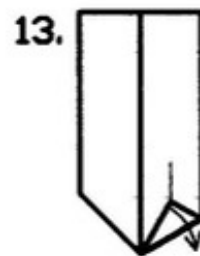
Inside reverse fold on the previous crease.



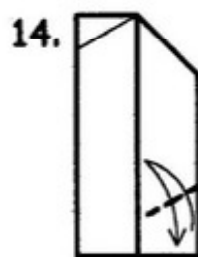
On the right cupboard door flap only, fold the flap to the right edge, pinching near to the bottom.



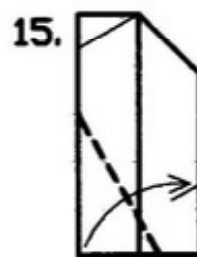
12. Pivoting around the middle of the bottom edge, fold the lower right corner so that the corner lies on the pinchmark.



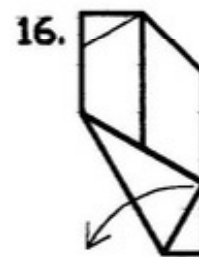
13. It should look like this. Unfold. Rotate the unit 180°.



14. Pivoting around the lower left corner, fold the lower right corner so the corner lies on the center crease of the unit. Pinch only on the right edge.



15. Fold the lower left corner to the right so that the point lies where the pinchmark hits the right edge.



16. This should be the result. Unfold that last fold.



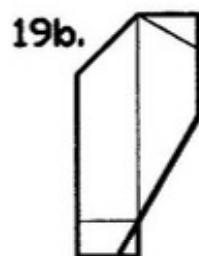
17. Inside reverse fold the lower left corner. Keep the flap underneath the right cupboard door flap. Leave the little corner on the bottom visible.



18. Fold the unit in half down the center. Unfold.

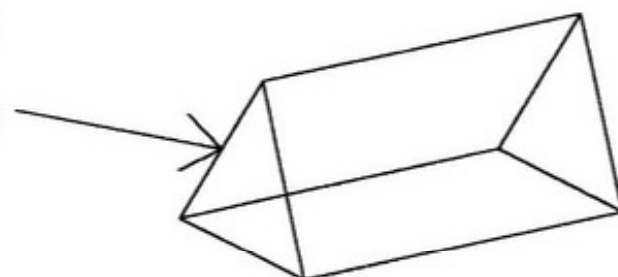


19a. Valley fold the end at the bottom of the unit to form a little rectangular flap. Unfold. Turn over.

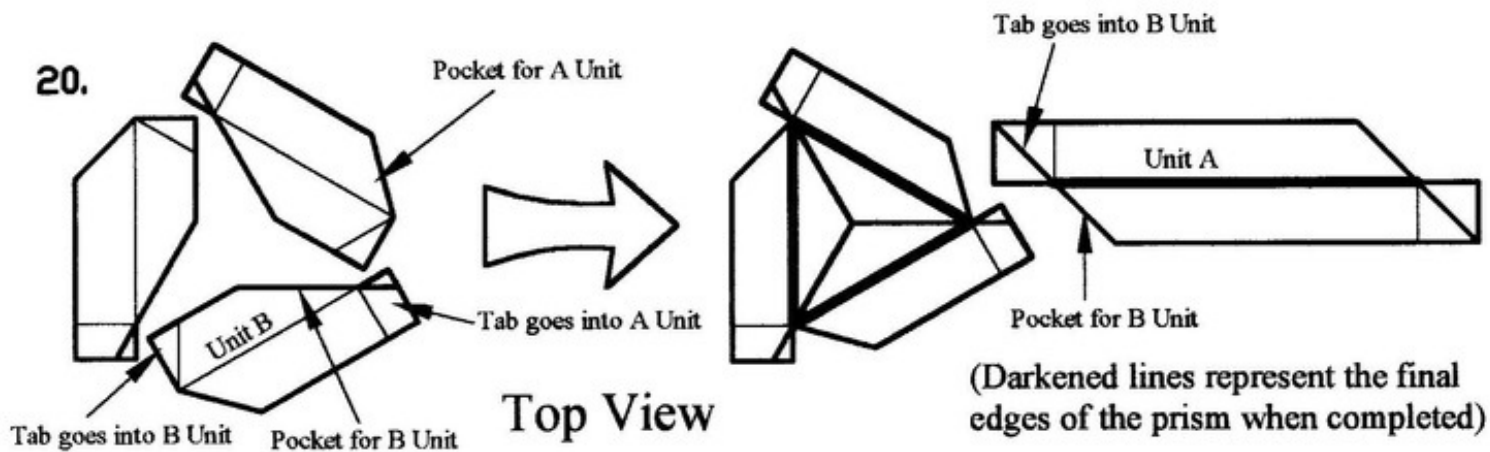


19b. Completed unit B (view from outside of unit). Fold the other 23.

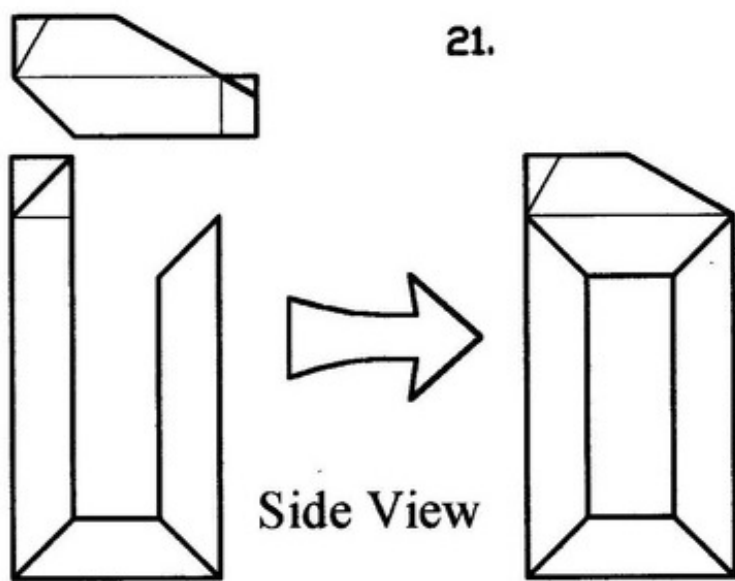
The B units will become the six triangle-forming short edges of each triangular prism.



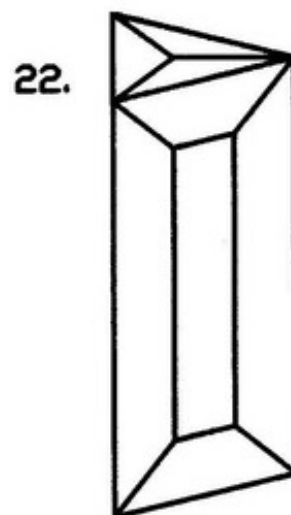
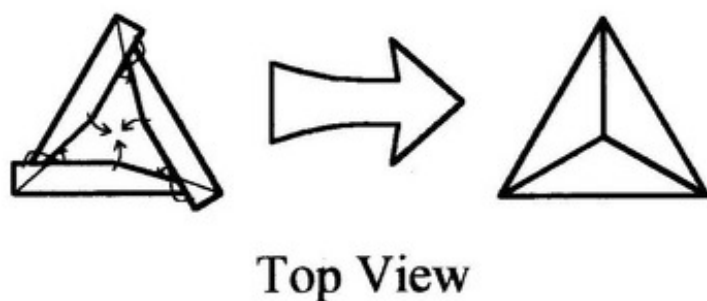
Assembling the Model



To make the first prism, start by taking three of the B units and putting them together to form a triangle. Then add the three A units at each corner of the triangle. When adding each A unit, you may find it helps to look at the inside of the model because the A unit has to go underneath the cupboard door fold on the opposite side of the B unit's pocket in addition to being in the reverse fold pocket; it will not go there automatically. Keep in mind as well, while adding the A units, that the darkened edge in the diagram of the A unit must end up perpendicular to both of the adjacent B units' darkened lines. The model should be 3-d after adding an A unit.

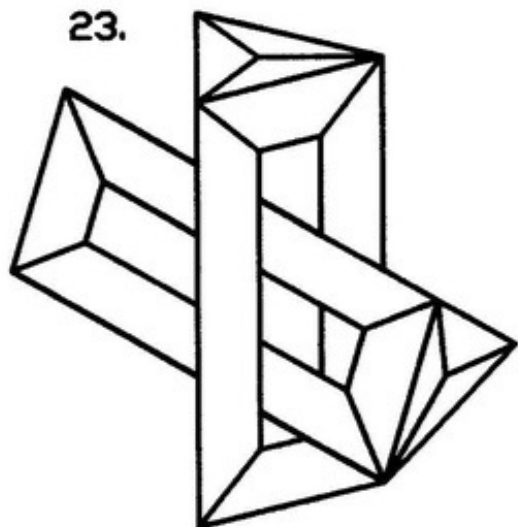


To complete the other end of the triangular prism, add one B unit at a time. Add each B unit, connecting each to two A units (don't forget to keep the A tab underneath the cupboard door fold on the opposite side). When adding each B unit to this end, do NOT lock in the tabs that connect the B units together. Instead, after all three B units have been placed, lock all three B units of these tabs at once in pinwheel fashion to complete the prism.



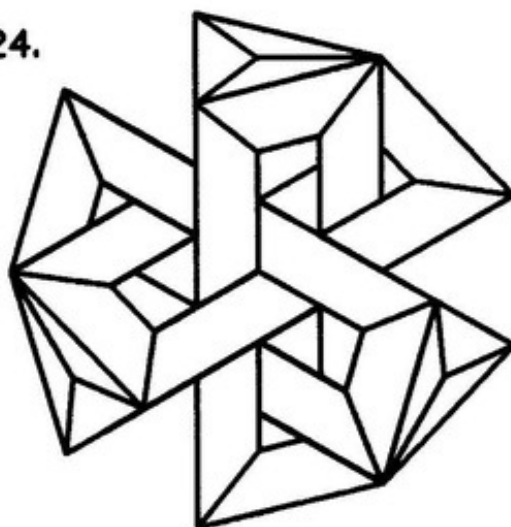
This is one completed triangular prism.

23.



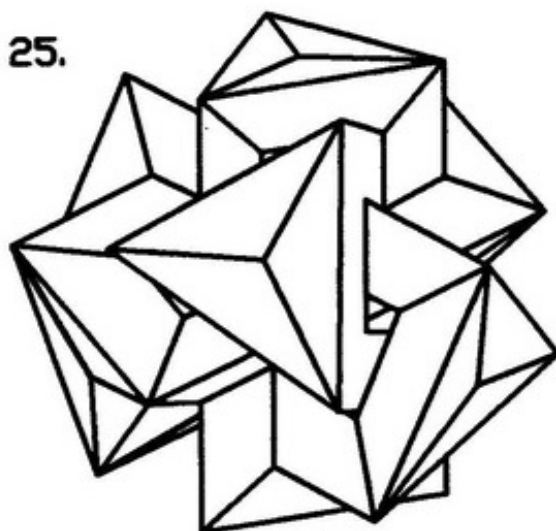
The best way to add each of the other prisms is to first put together the entire prism except for the second end of the prism, thread the prism into the model, and lock the prism to the rest of the model by adding the last three units to complete the prism. This picture shows the model after the second prism has been added. Note that every two prisms are interlocked with two long bars from each threading through the other prism.

24.



This is three of the four prisms. When you thread the third prism through, look for the two 3-bar "intersections", on opposite sides of the model, as shown in the center of the diagram. After adding the third prism, the model should be sturdy.

25.



To add the fourth prism, just thread the three long struts through the three holes, which can be seen in step 24. This is the completed model (different viewing angle than the three previous steps).