1. Start with a square of origami paper. Fold in half horizontally.

2. Fold in half horizontally again.

3. Unfold and cut along creases so that you have four 1x4 strips.

4. Take a strip, colored-side up, and fold the left edge over to form a 60° angle.

5. Mountain fold along A, bringing edge B to edge C.
6. Mountain fold along A, bringing B to C.

7. Mountain fold along A, bringing B to C.

8. Mountain fold along A, bringing B to C.

9. Mountain fold along A, bringing B to C.

10. Mountain fold along A, bringing B to C.

12. Valley fold along A, bringing B to C.

13. Valley fold along A, bringing B to C.

14. Mountain fold along A, bringing B to C.

15. Valley fold along A, bringing B to C.

16. Unfold along A.

17. Valley fold along A, bringing B to C.
18. Valley fold along A, bringing B to C.

19. Pinch model at points A and B, opening a pocket for flap C.

20. Tuck flap C into the pocket.

(Open view of step 20 in progress.)

21. The completed triangle unit. (Note that it has pockets on all three sides.)
Connecting Triangles

Start with a 4x1 strip as in the previous model. Cut off a 1mm strip from its length. (This is necessary so that the connector units will fit inside the triangles.

1. Repeat steps 1-8 of the triangle unit.

2. Cut the units apart as shown to create four connector units. If you are going to make a large hyperbolic surface, attach a small piece of double-sided tape to each triangle on the connecting unit. Models with six or fewer triangles per vertex will not require tape. However, you may add tape to stabilize the model.

3. Pinch the triangle unit between thumb and index finger at A and B.

4. Insert connector unit as far as possible into the triangle.

5. Press the unit down it to secure the connection if you are using tape.

6. Repeat steps 3-5 to attach each additional triangle.

7. Two connected units. Add additional units in the same way. To construct a hyperbolic surface, attach seven units per vertex.

Comment [PU1]: If you are planning to make a model with many triangular units, you can speed up the cutting for both the triangle and connector units by using a straightedge (I used a metal ruler) and an Xacto blade on a cutting surface (I used a flattened corrugated cardboard box).