1. Crease a square of paper into quarters, vertically. (Optionally, crease in half horizontally; if you are planning to make a six-unit tetrahedron skip that part)

2. Crease the outside edges to the quarter-lines, effectively marking the outer eighths.

3. Valley fold along blue line. Don’t crease beyond the blue line yet.

4. Valley fold the blue lines, bringing the two red dots together and the two blue dots together.
5. Valley fold along both blue lines. Flatten everything out.

6. It should look like this. Unfold everything and rotate 180 degrees.

7. This is how your crease pattern should look. Blue lines are valley folds, red lines are mountain folds, and black lines can be either because it doesn’t matter yet.

8. Repeat steps 3 – 7 on what is now the bottom left corner. (Or steps 3 – 6; unfolding it again is only to check that you’re still on track.)

9. Refold the previous step. Rotate 180 degrees.

10. Valley fold blue line and mountain fold red line, tucking the edge inside the left-hand flap.
<p>| | |</p>
<table>
<thead>
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<tbody>
<tr>
<td>11. Valley fold blue lines and mountain fold red lines. Flatten everything out.</td>
<td>12. Mountain fold the red lines.</td>
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<tr>
<td><img src="image1.png" alt="Diagram" /></td>
<td><img src="image2.png" alt="Diagram" /></td>
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<tr>
<td>13. Sink the points by mountain folding the red lines and valley folding the blue lines.</td>
<td>14. Valley fold the blue line (unless you are making a 6-unit tetrahedron, in which case there’s no need.)</td>
</tr>
<tr>
<td><img src="image3.png" alt="Diagram" /></td>
<td><img src="image4.png" alt="Diagram" /></td>
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Assembling the units

There are two ways of putting these together. The first way gets you structures like this, with a slightly mysterious woven-by-aliens flavour. It’s not immediately clear which two bands of colour are halves of the same unit, since there are bits hidden under other bits.

1. Take two units and begin with them like this. Tuck the flap of the green unit inside the pocket of the blue unit.
2. Like this. This section would probably be easier to follow without words, wouldn’t it? Feel free to ignore them.
3. Add a third unit (the pale blue one), tucking its flap into the pocket of the green unit.
4. Now shift the dark blue unit so it lies on top of the pale blue one.
5. And tuck its flap into the light blue unit’s pocket. That’s one triangular face completed. Add more triangles to the edges of it in exactly the same way. Check out anything made with Sonobe units for a breakdown of how to add units to make polyhedra of different sizes.

The second way is a little easier to put together. I think the triangular faces have a slightly floral look, a bit like petals on the point of unfolding. Maybe?

It’s also slightly easier to assemble. This whole thing is the flap and this is the pocket.

1. Tuck the flap of the green unit inside the pocket of the blue unit.

2. Add a third unit (pale blue), tucking its flap inside the green unit’s pocket.
3. Lift the dark blue unit out on top of the light blue one.

4. Tuck the dark blue unit’s flap inside the light blue unit’s pocket. And that’s a face completed. Carry on just as you would with Sonobe units.

For some odd reason, I decided to put this 12-unit octahedron together with faces in both styles. There’s no real reason not to.