## Trapdoor Octahedron Puzzle



Designer: George Bell
Goal: Take it apart and put it back together
Solution video: https://www.youtube.com/watch?v=6pLIXKmy0CU

## Disassembly:

Note that two of the hexagonal faces contain a triangular face of a different color. To make the puzzle expand, press in these two faces with your thumb and forefinger (as shown above). Use your other hand to stop the motion. If you expand it far enough, it will fall apart.

Assembly: This is much harder. First, identify the smallest piece. This piece is also the only one with $180^{\circ}$ rotational symmetry. In the above photos, it is the green piece. Note that in your puzzle the piece colors may differ from those here.

Now take the other two pieces, and find the assembly below.


The yellow piece slides in from the left the red piece from the right. In the right photo, these two pieces are in their assembled configuration. We now need to somehow get the green piece between them.

To get the green piece in there, back the red and yellow pieces up until you are in the position of the left photo. Note that the two central points, as well as those above and below, should be just touching. With the red and yellow pieces in this position, add the green piece from above. There are four points which must engage into grooves. If you can engage all 4 simultaneously, the three pieces will slide together.

