Toby the Turtle
paper sculpture kit

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**legs**

Join the short tab to the opposite side then glue the triangles to the remaining tabs.

**head**

1. Join the tab with the red circle to the edge marked with the red arrow.
2. Join the tabs at the black arrows to the eye pieces -- the top edge of the nose piece (marked with the light blue square) joins to the tab with the light blue square.
3. Join the large back flap to the remaining tabs.

**tail**

First glue the long tab to the long edge, then glue the small triangle to the remaining tabs.

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Turtle Shell

Glue the pink, yellow, white, and brown tabs to the matching squares and triangles; then glue the remaining square to the green tabs.

Glue to the yellow tabs.

Glue to the pink tabs.

Glue to the brown tabs.

Glue to the white tabs.

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The geometry of Toby the Turtle

The turtle's shell is part of a polyhedron called the rhombicuboctahedron. We've sliced off the section at the bottom to create a flat base. The original rhombicuboctahedron had 8 equilateral triangles and 18 squares.

The tail of the turtle (not shown in this diagram) is a triangular pyramid.

The turtle's head is made from the same shape as the shell except we've first sliced off a section of the shell and then stretched out the remaining piece to make it a bit longer and thinner. The squares on the shell are now rectangles on the head, and the equilateral triangles on the shell now have two long sides and one short side on the head.

The turtle's feet are triangular prisms. A triangular prism is made from two identical triangles connected by rectangles.

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