

Making an Aztec Step Pyramid



This Guide To Making an Aztec Step Pyramid
was reprinted with the kind permission of Dr. David Kuijt

Two years ago, Dr Kuijt, also created made a very large model of
El Castillo, the great Mayan pyramid of Kukulkan in Chichen Itza.

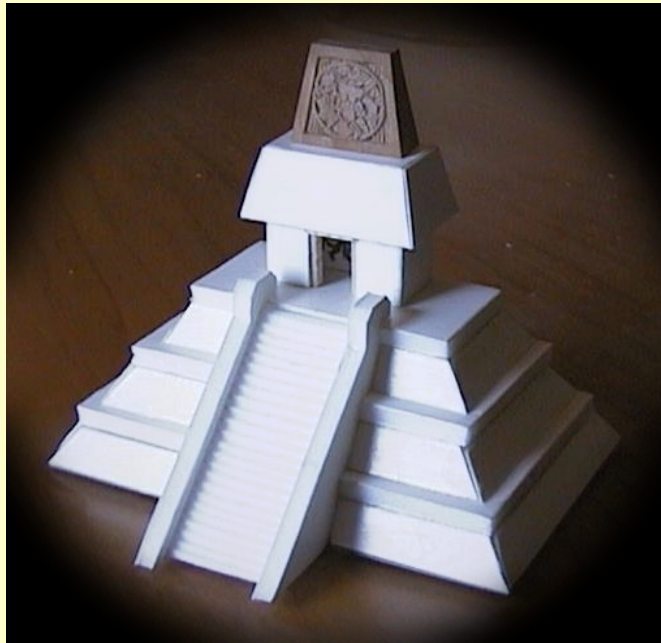
If you love creating models of ancient monuments:

The Mayan Pyramid website is here:

<http://www.umiacs.umd.edu/~kuijt/dba105/Castillo/Castillo.html>

Captain Bootsie Bear and His Fearless Crew's website
<http://www.cptbootsiesmagictimemachine.com/>

INTRODUCTION
HOW IT ALL BEGAN
Recounted by Dr Kuijt



I recently began painting a 15mm Aztec army for DBA. No DBA army is complete without a nice camp, and Josef Ochman's beautiful 15mm Aztec miniatures inspired me to be more creative than usual. What camp could inspire fear and awe in a foe better than a proper Mesoamerican step pyramid?

Before building anything, I drew plans out on graph paper to get the angle of the walls looking right. It needed to be tall enough to be impressive, but small enough that it didn't take too much space on the battlefield. I had a couple of illustrations of Aztec pyramid reconstructions to choose from, and I found a few more illustrations on the web. This pyramid is based upon a couple of sources; it is intended to look appropriate without being an exact copy of any particular pyramid.

The bulk of the construction work is based upon the foamcore construction technique described [here](#), in one of the sub-pages of [Major General Tremorden Rederring's Colonial-era Wargames Page](#). The Major General's page is a wonderful site with a veritable treasure-trove of ideas for constructing scenery, terrain, buildings, and many other miniatures-gaming miscellanea.

Pyramid Base

The pyramid is made out of foamcore.
I cut out the slabs for the top of each level.

I cut a piece of cardboard the same size as each major slab and glued it onto the major slab below, to mark the right position for gluing. The bottom level was a piece of cardboard exactly the size of the base (including angled walls).

At each level I cut out two smaller slabs of foamcore to support the level above, but still give enough room for the angled walls to fit.

I glued the slabs together to give the pyramid its rough shape without angled walls.

Cutting the angled walls was finicky, but not too difficult.

Everything glued together with white glue (PVA); after it dried I trimmed some of the pieces and added more PVA to fill any gaps.



Staircase

For the steps I first cut the side pieces to shape, then fitted and trimmed and fitted and trimmed until they fit flush to the pyramid sides.



Underside of Stair

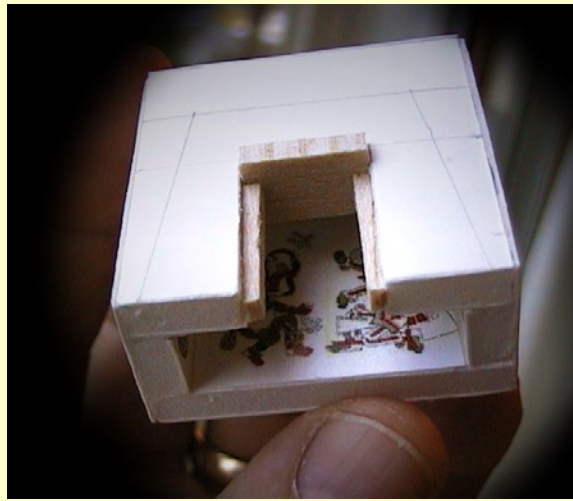
Then I cut a too-long piece of foamcore and carefully trimmed the paper off one surface. I used a pencil to mark a series of closely spaced lines, then cut with an exacto-knife at an angle along the lines to make stairs. The exact angle didn't matter too much.

I glued a pair of cardboard supports to the side pieces to help position the stair-piece correctly and keep it flat (it had a tendency to curve, with paper only on one side). Glued it down, then I glued the whole staircase to the pyramid.



Ritual Building

The ritual building was a simple block of foamcore with an angled roof. Sketched out in advance, so it looked right. After building the pieces I printed out some resized Aztec art (found on the web) and glued it down as wall murals on the building's interior back wall. I sketched some half-images on the side walls so it isn't possible to look into the building even at a sharp angle without seeing murals. The murals are described in more detail later in this document.



Once the murals were glued down and dry I put the building front on. The doorway looked a little unfinished, so I added some balsa-wood slats to give it a little more complexity; once these are plastered they should look very nice.

After the door was finished I cut the angled roof-pieces and glued them down.

Painted Murals



Aztec buildings were covered in brightly-coloured murals. Although few of them survive, a feel for Aztec use of decorative colours and images can still be found in various codices that survive from pre-Columban Mesoamerica. Some of the images from these codices are up on the net; see the links section at the bottom of this page. On the TerraGenesis page I found some inspiration and a great idea in Jeff Koppe's Aztec Gateway.

He mentioned the idea of downloading aztec images from the net and using them as murals, although physical problems (losing scanner access) prevented him from capitalizing on the clever plan.

I found some of these images (from Codex Mendoza, I believe). To make murals for the inside of the ritual building, and (eventually) for the outside walls of that building and other surfaces, I downloaded the images, shrunk them to an appropriate size, and printed them off on my colour inkjet (300dpi resolution, I think).



Pasting the colour murals to the walls with white glue was easy. For the interior of the ritual building I painted tiny half-murals on the left and right side walls so the whole interior of the building would appear to be painted no matter what angle you looked through the door. The half-murals aren't downloaded images, they are just drawings with a set of very fine-point colour pens.

Carved Stele



Many of the pyramids had large stele on top of their roofs, and I thought that would be cool. I cut a piece of fine-grain hardwood on my tablesaw, then sanded it to the right shape and smoothness. I transferred the design from the web image to the wood, then carved it out with a #11 exacto knife.

I copied the pattern for the stele from the enormous [Stone Carving of Coyolxauhqui](#) discovered in 1978 in Mexico city. See the links section below for more information.

Feathered Serpents Everywhere

The pyramid structure was now finished in crude terms, but the decoration isn't complete yet. In particular, I wanted to have some carved 'stone' decorations for the exterior of the pyramid, but I didn't want to carve them all individually.

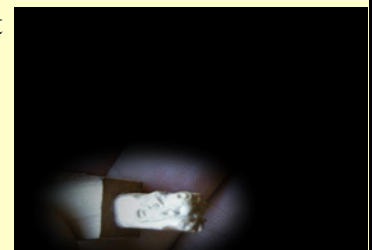


I experimented with a relatively simple mass-production technique described in the [Lizardman Temple](#) page, a sub-page of Gary James' [TerraGenesis](#) webpage. Like the Major General's page, TerraGenesis is absolutely full of cool construction ideas. One of the ideas was the use of plaster and sculpee/plasticene to make a number of plaster casts of a carved original object; another was using a digital image and colour printer to make detailed "murals" with little effort. As shown later, the mural

idea worked very well. The cast plaster idea worked well for other experiments on flat designs, but not so well for objects in the round (3-d carvings like the feathered serpent).



I carved a master feathered-serpent head out of a piece of fine-grained hardwood I had lying around (crab-apple, I think) with an exacto knife. The cast-plaster in sculpee moulds technique turned out to work very well for relatively flat designs, but quite poorly for 3-d objects like my kukulcan head. After a lot of fiddling and failures,



I contacted my friend Nic Robson (Eureka Miniatures) in Australia, and had him use my master to cast up a dozen or more in pewter. They came out very well indeed.

Finished Pyramid



After adding all the Kukulkan (feathered serpent) heads I sprayed the whole pyramid with white primer; several coats. Before spraying I coated all the exposed foam interior from the foamcore with a painted-on coat of white glue (Weldbond) to prevent it from melting in the spraypaint solvent.



Here are some detailed images of the finished pyramid.

I chose colours to match those used in the surviving Aztec Codices; reds and yellows and ochres, all earth-tones and not too brilliant. The murals on the ritual building at the top of the pyramid are images of dieties downloaded from the web, reduced in scale, and cleaned up with a paint program, then printed on a good colour printer and glued into place. There are murals inside the building as well as outside, although that is difficult to show without a fancy fiber-optic camera.



The Murals running along the bottom level of the pyramid are the 20 day signs of the Aztec calendar. Although their inclusion as decorative elements is purely speculative, the day signs were deeply tied to the formal religion and culture of Meso-America, and they occupy an important place in surviving religious documents from that period. As astrology and religion were deeply linked for the Aztecs, and the day-signs were crucially important to them, it seemed reasonable to use them as decorative murals on the bottom level. The day-signs were scanned from the Dover Books copy of the Codex Mendoza I own, cleaned up with a paint program, reduced to about 3/8" high and printed out on a good colour printer. Then I just glued the strips down.

I painted the Kukulkan heads in reds, yellows, and browns, leaving the teeth white. The teeth on the "feathered serpent pyramid" in Mexico still show signs of white paint; the other colours are speculative. Greens and blues are as common as reds and yellows in surviving Aztec murals, but I decided to match the colours to the earthtones used in several of the Codices that survive; it also matches colours of the murals better than bright greens or blues would.



Some of the detailed lines are drawn with .25mm technical pens. The image background is taken from a photograph of the enormous Post-Classic Meso-american temple site, Monte Alban. I found the image on the web, sadly I can no longer find the reference, so I can't give credit to the photographer. I printed the picture out on my colour printer and taped it to a board for background. This is easy enough, but not as effective as using a fancy photoshop program to slap the background in directly to the finished image. Hopefully I'll get something that will let me add backgrounds digitally at some point.

Links

[TerraGenesis](#) : an excellent site for constructing miniature gaming terrain and props. Full of great ideas and techniques.

[Lizardman Temple](#) one of my inspirations.

Jeff Koppe's [Aztec Gateway](#), another inspiration.

[Major General Tremorden Rederring's Colonial-era Wargames Page](#) : another wonderful and creative site, an excellent resource for constructing miniature gaming terrain and props.

[Foamcore Buildings](#) a detailed how-to for the construction technique I used.

[Templo Mayor Museum](#) an excellent site covering the Great Temple in Teotihuacan (Mexico City). Lots of images of Mesoamerican artifacts and dietics.

[Stone Carving of Coyolxauhqui](#), one of the images on the Templo Mayor site, and the basis for the design of my carved stele. The original sculpture weighs 8 tons, is 3.25 meters across, and was discovered in Mexico City in 1978.

[Edgar's Mesoamerican Links Page](#). A good starting point for a search for online information on the Aztecs.

May 13, 1999. Page updated with pictures of the kukulcan carving and images of the finished pyramid.

January 26, 1999. Inserted links and mural-idea credit to Jeff Koppe's page.

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