This past week was spent making the chin guard mold and the chin guard itself. Once again, this was a very time consuming process. Initially an attempt was made by molding two pieces of identical clay which would serve as the sides of the chin guard. However, applying the Kevlar composite to this along with the three dimensional shaping that would have to be formed did not seem to work out. Another idea was to cut out the entire shape of the chin guard out of cardboard and then bend the cardboard appropriately to create the three dimensional shape of the guard. This started off as a fairly good process: the cardboard cutout looked and fit the helmet great. Next, the Kevlar was going to be applied around the cardboard so as to maintain the proper shape.

The Kevlar composite was prepared and applied to the cardboard mold. This was not the best idea for a number of reasons. The cardboard is very absorbent and ended up soaking up a lot of the epoxy and became soggy and lost its shape. In addition, the Kevlar did not stick to the Kevlar well like it would on other molds. After more Kevlar was laid on, it was easier to bend and maintain the appropriate shape. However, in all of the application, the mold must have stretched out slightly and the chin angle increased which resulted in the chin guard being too wide for the helmet after it cured. A better curing process will have to be used to hold the guard in place so it dries in proper form.

Figures are on following page.
Figure 1. The finished chin guard. Cured shape did not come out as expected.

Figure 2. The chin guard shown in proportion to the helmet. It cured too wide.