**About This Project: Topographic Maps and Model Making***October 2019  
Seventh and Eighth Grade Earth Science*

Seventh and Eighth grade students have been studying map making methods. In this project, students created their own topographic map and model for a cabin located in the Little Belt Mountains.

To begin, students had to create a rough draft map of their imaginary forested site. They were restricted to a place that could exist in the local mountains, though it didn’t need to be the exact replica of a specific area. The area needed to rocky and textured, feature a stream and cabins, and have a minimum of seven changes in elevation. Students were provided with scale for the map and the contour interval.

The models were constructed using layers of cardboard to fabricate elevations that were later covered with paper mâché to produce a terrain. Students painted the terrain with acrylic adding grassy areas, stream beds and buffs. “Trees” were created with decorative moss and foam.

Houses were designed in TinkerCad, a free, student friendly, computer-aided drafting software for 3D modeling. After students developed a computer model, a 1:30 scale version of their house was printed on a 3D printer in PLA plastic. A final 1:600 scale version was printed and painted to add to their relief map.

The maps were created using the cardboard model pieces before gluing. Each cardboard layer represents a “jump” of three meters in elevation, and was traced onto the map to create contour lines. Students finished the maps by adding a title, legend, scale, date, and compass rose.

Test the craftsmanship of the students. Try matching each of the maps with the corresponding model.