



About the Map

Pitkin County's mountainous terrain provides an ideal opportunity to explore how spatial data can be used with 3D printing. By holding a 3D map print in your hands you can touch the physical geography of an area. The landscape can also be interactively viewed from different angles, elevations and perspectives. Features of interest can be explored in more detail and by tangibly comparing it to other parts of the map.

We recognize that a 3D printed puzzle isn't unique, but it is a good method to represent a large map to overcome the limited print surface of our 3D printer.

The GIS team felt confident that we knew the terrain of our region, but were surprised by the challenge of solving this puzzle without a reference map! This is when we came up with the idea of making basemaps with several levels of difficulty to challenge and appeal to a broader audience.

- Level 1 (easy):** Locate matching color patterns and shapes of the parts to the same features on the basemap. Four color basemap that matches the prints, areas are named, and print outlines are on the map.
- Level 2 (medium):** Read the basemap features and find the 3D part that corresponds to that area. USGS topo basemap with the outer boundary.
- Level 3 (hard):** Interpret the 3D printed map and compare it to the basemap features to locate where it belongs. World topography basemap and outer boundary.
- Level 4 (very hard):** Evaluate each part and determine how they all fit together. Basemap includes watershed sub basins, instream flow stream reaches and outer boundary.

Our community is aware of the different watersheds in the region, as the natural and built environment changes across these. The initial approach was to create the map based on watershed boundaries, however the result was chopping up significant mountain ranges and losing the impact of terrain features. By creating the pieces to keep mountains and ridges together, the focus of the map illustrates the vast difference of mountain configuration, size, shape and height.

With the workflow of transforming GIS data into 3D prints dialed in from this project, we will be utilizing the 3D printer process on the following projects this summer:

- Fire perimeter overlay for Basalt Mountain that burned 12,588 acres in 2018.
- Capitol Peak small scale print. One of the deadliest peaks in Colorado it claimed five climber deaths in 2017.
- UAS mission prints of various County facilities.

This interactive map is displayed the lobby of the County's administration building where we encourage our citizens, staff, elected officials and visitors to explore their environment. The map will be taken to various events including local school programs, farmer's markets, GIS day, and land conservation groups.

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