

## **GEOMORPHOLOGY PROJECT IDEAS**

1. Make a slope map of a drainage basin and use it to infer the distribution of geomorphic processes. Field check your predictions.
2. Describe and document the stratigraphy of glacial sediments exposed in a gravel pit. Interpret the environment of deposition in terms of glacial processes.
3. Calculate the drainage density in various parts of a drainage basin and relate the density to basin characteristics.
4. Trace the drainage networks in basins developed on different rock types and describe the similarities or differences you see.
5. Model the shape and thickness of the continental ice sheet.
6. Use an erosion law and a spread sheet to evolve a landscape.
7. Measure and describe a section of rhythmic glacial lake sediments. Make a climatic interpretation.
8. Analyze a long-term series of weather data to see how climate varies or may have changed over time.
9. Measure discharge and or bed material in a stream at a variety of locations from headwaters down the drainage.
10. Determine Manning's  $n$  for several streams or several locations on the same stream.
11. Calculate the volume and mass of the Appalachians and compare them to other mountain ranges.
12. Make a histogram of elevations for an area and interpret it in a geomorphic context.
13. Use topographic maps to compare a glaciated and unglaciated drainage basin of similar lithology.
14. Use tombstones to estimate rates of weathering for different lithologies.
15. Use a lake core to understand climate change
16. Survey stream channel geometries as a function of distance downstream.
17. Survey hillslope profiles and relate your observations to geomorphic processes.
18. Find a landslide and try to figure out why it slid.
19. Determine the empirical relationship between water velocity, slope, discharge and channel size for a stream.
20. Measure alluvial fan volumes
21. Develop a rating curve for a local stream which relates discharge and stage (water height).
22. Measure infiltration rates for local soils.
23. Measure raindrop sizes for different storms.
24. Investigate effects of urban land-use change on runoff

