

Using Data in Earth Science



Teacher Professional Development

Prairie Middle School, Cherry Creek School District, Aurora, Colorado
February 2014

Agenda

PLEASE ask questions as you think of them!

Overview :

- About UNAVCO, EarthScope, and the Plate Boundary Observatory
- About Geodesy and applications of geodesy to science & society
- Educational resources @ UNAVCO
- Connecting with UNAVCO on Facebook

GPS Basics [Hands on – presentation]

- How GPS works
- How high-precision GPS measures plate motions to the millimeter

Taking the pulse of Yellowstone’s “breathing” volcano: Problem-based learning in America’s first national park [Educational module]

- Eruption history
- Hydrothermal activity
- Seismic activity
- Ground deformation

Exploring plate motion and deformation in California with GPS data [Educational activity]

Students analyze GPS data to study the motion of the Pacific and North American tectonic plates.

What’s under the shrubbery? Using LiDAR and Google Earth to study erosion, landslides, and more! [Handout and Google Earth exploration]

Places to find LiDAR images!

- Open Topography: <http://www.opentopography.org/>
- National Lidar Dataset (United States) (Wikipedia) [https://en.wikipedia.org/wiki/National_Lidar_Dataset_\(United_States\)](https://en.wikipedia.org/wiki/National_Lidar_Dataset_(United_States))
- Colorado: <http://coloradogeologicalsurvey.org/geologic-mapping/lidar/>
- Wyoming: <https://www.nrcs.usda.gov/wps/portal/nrcs/main/wy/technical/dma/gis/>

A tour of data resources for your classroom

- Handout: How fast are we moving? Exploring plate motion using the UNAVCO GPS Velocity Viewer
- UNAVCO Global Data Ruler: GPS, earthquakes, and strain
- GPS Spotlight
- PBO H₂O

