**RMapping Terms:**

Coordinate reference systems (crs) – systems for defining the specific map projection. Can be on a local, region, or global scale, and uses coordinates to locate specific geography on a map.

EPSG registry - is a public registry of geodetic datums, spatial reference systems, Earth ellipsoids, coordinate transformations and related units of measurement.

* 4326 - standard WGS 84 - lat / long coordinate system based on the center of earths mass.
* 29616 – standard NAD83 - is the horizontal and geometric control datum for the United States, Canada, Mexico, and Central America.

Geographic coordinate system - a system that uses a three-dimensional spherical surface to determine locations on the Earth – aka a 3D model for finding locations on a globe.

* Longitude/Latitude

Projected coordinate system - a flat, two-dimensional representation of the Earth. It is based on a sphere or spheroid geographic coordinate system, but it uses linear units of measure for coordinates, so that calculations of distance and area are easily done in terms of those same units – aka a 2D model for finding locations on a map.

* Northing/Easting - northing is the distance to the equator, while easting is the distance to the "false easting", which is uniquely defined in each UTM zone
* Universal Transverse Mercator (UTM) - a grid-based method of specifying locations on the surface of the Earth that is a practical application of a 2-dimensional Cartesian coordinate system.
  + Lansing is in UTM 16N or (more specifically) 16T

Datum - is one parameter in a geographic coordinate system (GCS). The datum is the part of the GCS that determines which model (spheroid) is used to represent the earth's surface and where it is positioned relative to the surface.

**Group 2:**

* Fill out the definitions for the RMapping terms above.
* Answer the following in the same file as the definitions:
  + Why do we need to use different datums?
    - We use different datum based on the frame of reference and accuracy needed by the map maker. It wouldn’t make sense, for example, to use a datum which is specific to the U.S. when making a map of Europe as it would dramatically reduce the accuracy of the map.
  + What is a false northing/easting? Why is this used?
    - False easting is a linear value applied to the origin of the x coordinates. False northing is a linear value applied to the origin of the y coordinates. Both are used to accurately align latitude and longitude coordinates with grid coordinates, ergo, it is easier to make measurements in quadrant 1 of the Cartesian grid so that measurements always remain positive.
* Put definitions/answers in your repository and Push/Commit.
  + In the Commit message, give the file name that has the answers.