**Mapping Unit Review/ Mrs. Cohn/Mr. Avigliano**

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. **The Shape of the Earth:** 
   1. Earth is an OBLATE SPHEROID (it’s wider at the equator than it is at the poles)
      1. This is due to rotation
   2. The best model of the earth is a globe/sphere
   3. Our evidence that the earth is spherical comes from:
      1. Satellite Images from space (the best)
      2. The changing positions of stars as one moves from north to south (ex: Polaris)
      3. The appearance of a “sinking ship”
      4. The Earth’s shadow on the moon during a Lunar Eclipse
      5. Gravity measurements over earth (gravity is *almost* measured to be the same strength everywhere on earth…at the equator it is slightly less (see fact “a” above)
2. **Latitude and Longitude**
   1. Latitude lines run E 🡪 W but measure your position N🡪S, therefore all latitude directions are in North or South. “Latitude=Flatitude”
      1. The reference line is the equator at 0 degrees
   2. Longitude lines run N🡪S but measure your position E🡪W. Longitude lines are also called meridians and intersect at the poles.
      1. The reference lines for longitude are the prime meridian at 0 degrees which runs directly through Greenwich England, and the international date line (IDL) at 180 degrees
   3. The NYS map shows major NYS cities and land features plotted in both degrees and minutes ( ‘). Each degree of latitude is broken down into 60 minutes. The half way mark between each line of latitude and longitude are marked on pg. 3 of your ESRT with tick marks ( – ) which are equivalent to 30 minutes.
   4. There are two other maps in your ESRT which show global latitude and longitude (pg. 4-5)
   5. Latitude is always report first, followed by longitude.
3. **Time Zones:** 
   1. Earth spins 360 degrees in 24 hours, therefore each hour Earth rotates 15 degrees.
   2. Each time zone on earth is marked by a 15 degree change in longitude.
   3. If your longitude does not change, your time stays the same!
   4. Earth rotates from West to East
   5. Travel East, time does increase
   6. Travel West time is less
4. **Isolines :**
   1. Are points of equal value on a map. All isolines must be drawn through the point on a map (or number if the point is not shown). Isotherms show temperature, Isobars show pressure, Contour lines show elevation/altitude.
   2. Isolines are curved and always follow a pattern
   3. Isolines extend to the edges of a map
   4. Isolines do not cross or intersect

**V: Gradient:**

1. Gradient is calculated using the formula on pg 1 of your ESRT

(Change in field value / Distance).

1. Distance is always found by using a map scale and a scrap sheet of paper
2. Where isolines come closer together, the gradient is greater/steeper and where further apart, the gradient is less/gentle.
3. Final value for gradient must include units: ex: 5 m/km (read as 5 meters per kilometer)

**General Topographic Map Skills:**

1. Topographic maps show a change in elevation on a map either in feet or meters
2. The contour interval is the change in elevation between each contour line
3. The index contours are marked in bold and are usually the only elevations labeled on a contour map
4. Contour lines bend and make a V when they cross a stream or river. The V points upslope, or the OPPOSITE direction that water flows. Water always flows downslope!
5. General patterns: Concentric circles of higher elevations indicate a hill or mountain and V shaped contour lines indicate the presence of a valley
6. Hachured contour lines show depressions, features in the land where the elevation is decreasing in a not typical pattern (does not follow pattern of other contour lines). The first hachured contour line is equal to the previous contour line that is lower in elevation.
7. Profiles show a side view of a topographic map. In order to construct a profile, a scrap sheet of paper must be used and lined up DIRECTLY BELOW the profile line between points. Wherever a contour line crosses/meets your paper’s edge, it is marked on your paper and labeled with the correct elevation. After all lines have been marked, drag your piece of paper down to the profile graph and plot. (A helpful video is posted on class page resources!)