Understanding Different Grid Systems
UTM (Universal Transverse Mercator)

Determining UTM Coordinates
(Taken from the Iowa NatureMapping Activities)

The UTM (Universal Transverse Mercator) system is another way to pinpoint your location on a map. The advantage of using UTM’s is that they are exact points based entirely on actual distance. On a map, distance and area are important. Latitude and Longitude are an exact point as well, yet the information is not distance-based. You’ve probably noticed how the ‘longitude lines (those running vertically on a globe) converge at the poles. This convergence makes it difficult to convert “degrees” traveled West to East into “distance” traveled West to East.

- The UTM system is laid out in a grid pattern. Think of finding a UTM coordinate like finding an (x) and (y) point in algebra.
- UTM numbers are in Kilometers. Add three zeros and you have converted them to Meters.
- There are two numbers to be found in a UTM coordinate:
  - The first number coincides with an East direction (or “Easting”). This is (x). These numbers can be found along the top and bottom of the quad map.
  - The second number coincides with a North direction (or “Northing”). This is (y). These numbers can be found along the left and right sides of the quad map.
- Always “read RIGHT UP” – find the distance to the EAST, then the distance to the NORTH. Note: since we are in the Northern Hemisphere, we read UTM’s to the “North”. People in the Southern Hemisphere read UTM’s to the “South”.
- UTM numbers coincide with a light blue tick mark along the edges of the 7.5 minute quad maps. Some 7.5 minute quad don’t have the blue ticks, but instead have a fine black UTM grid laid out over the entire map.
- UTM numbers are not exclusive to just one spot on Earth. They are used over again in each zone.
- It is important to report what zone you are in.
- If you use a GPS to collect data, make sure the correct settings (UTM and zone) are being used.

- UTM numbers coincide with a light blue tick mark along the edges of the 7.5 minute quad maps. Some 7.5 minute quad don’t have the blue ticks, but instead have a fine black UTM grid laid out over the entire map.