Surveying Main Lesson – Lesson Plans

By Jeff O'Brien – 2014

Here is how all this could be organized into a 15 day main lesson:

Day 1:
Course expectations
Review Trigonometry, Scale Drawings
Look at Different Maps from throughout History of the World,
Are different maps created to be used for specific purposes?
What goes into the Legend of a map?
Possible Homework: Create a map of the Social Cyber World. How much space does Facebook take up? Twitter? Texting? Email? Snapchat? Etc. Are they islands or are they connected (do they have borders)? Are any "nations" of the Cyber Social World contained within others (Isn't Skype part of something?)

Day 2:
Review Day 1 (different maps, what is the point of maps)
Share maps of the Social Cyber World
Handout and discuss different Topographical maps
Do Activity #1 (save page 2 for homework)
Possible Homework: Page 2 of Activity #1

Day 3:
Review Day 2 (Topographical Maps)
Share HW (contour lines for page 2 of Activity #1) Are they all the same?
If you wanted to create a topographical map for a pierce of land (say the field across the street), what would be needed to create a the data needed? How would you find the elevations at specific points in a scale drawing?
Discussion of 3 dimensional systems. order does not matter etc.
Possible Homework: Trigonometry Problems, Scale reduction problems

Day 4:
Review Day 3 (How to cerate data for a topographical map, 3-dimensional systems)
Go over or Collect HW (trigonometry and scale reduction problems)
Agree on the distance, compass bearing, angle of elevation system of measuring.
Go over tools and how to use them, tape measure, compass, clinometer (or transit).
Measure Classroom for scale Drawing.
Homework: Create a scale drawing of the classroom.

Day 5:
Review day 4 (distance, compass, bearing, angle of elevation will create data for a topographical map), Tools to use to find these are tape measure, compass, clinometer (or transit)
Share scale drawings of classroom.
Do activity #3 (angle of elevation), share results
Possible Homework: Trigonometry Problems, Scale reduction problems

Day #6
Review Day #5 (activity #3, angle of elevation)
Go over or collect homework (Trigonometry Problems, Scale reduction problems)
Do activity #4 (compass bearing), share results, de-breif
Possible homework: Trigonometry Problems, Scale reduction problems

Day #7
Review Day #6 (compass bearing)
Go over or collect homework (Trigonometry Problems, Scale reduction problems)
Get ready to map your first piece of land (hopefully right outside the classroom), go over the parallelogram, the table for the data, the need for accuracy, for every set of data there should be two people at the reference point and two people at the data point. Each pair confirms every measurement of the other.
Go out and start measuring. (Activity #5)
Possible homework: Trigonometry Problems, Scale reduction problems

Day #8
Quick Review of Day #7 (how to collect data)
Finish collecting data.
Possible Homework: Fill expanded table (find $d\sin\theta$, $d\cos\theta$ for all points)

Day #9
Review Day#8 (any questions on the process)
Work on Map #1
Possible Homework: Finish Map #1

Day #10
Review Day #9, Share, critique maps
Debrief process, errors etc. If you will be using a transit for the second map, introduce it.
Possible Homework:

Day #11 (possibly at remote site)
Gather data for Map #2 (Activity #6)

Day #12 (possibly at remote site)
Gather data for Map #2 (Activity #6)
Homework: complete expanded data table for map #2 (find $d\sin\theta$, $d\cos\theta$ for all points)

Day #13 (back in the classroom)
Work on Map #2

Day #14
Continue Work on Map #2

Day #15
Share, critique maps
A very advanced scavenger hunt is a fun activity for the last day