*This is an example of how I might introduce a new lab in an advanced GIS course with a worksheet that requires students to explore the data before beginning their analysis. The worksheet asks them to download and open a dataset, locate and examine its metadata, then work with a partner to answer specific questions about the data. The worksheet is ungraded, but if completed, it helps them answer questions in the graded assignment report and helps them develop a workflow that they can apply to the self-directed project that comes later in the term. I explain this learning sequence transparently, giving my reasons for assigning an ungraded worksheet and making it clear that the choice to complete it is theirs. In this process, I balance meeting students where they are and trusting them to make their own decisions about their learning.*

**GEOG 461, Week 2 lab section worksheet**

This worksheet is ungraded but will help guide your learning today and help me gauge your engagement.

**Part 1:** Take 5 minutes to individually explore the Opportunity Map at http://www.arcgis.com/home/webmap/viewer.html?webmap=cef5a9b4438c4340b90cb21163838f6f&extent (you can also find this link on Canvas):

- Using the 'Show Contents of Map' tab in the table of contents, explore the different layers that are available. Turn different layers on and off to observe the spatial variation of the layers.
- Click on specific features in some of the layers to learn more about those features
- Explore the associated data tables, look more closely at areas of the region that particularly interest you, etc.

**Part 2:** With a partner complete the following:

- Visit https://www.psrc.org/opportunity-mapping and locate the metadata for the Indicator. (This will take a tiny bit of searching—practice your information acquisition skills!)
- *What is the spatial unit of analysis for the Opportunity index?* _____
- Pick one of the five indicators and list the 3 to 5 metrics that comprise that indicator:
    - *Indicator:*
        1. *Metric:*
        2. *Metric:*
        3. *Metric:*
        4. *Metric:*
        5. *Metric:*
- Pick one metric and go through all the metadata associated with it. Discuss with your partner what each entry (description, field code, data source, etc.) means. MAKE SURE YOU UNDERSTAND THIS; ASK QUESTIONS IF ANYTHING IS UNCLEAR.

**Part 3:** Begin working with the data in ArcMap:

- Download the zip file of Opportunity Region Shapefiles from Canvas
- Extract the files in this folder to your hard drive (I recommend creating a new folder for the course on your U: drive; practice good file organization!)

- In a new blank map document, open the Opportunity_region.shp and OppIndicator_reg.dbf
- Open the Variables for Opportunity Index guide on Canvas. This provides an easy guide to the key variable names in OppIndicator_reg.dbf.
- Open the table for OppIndicator_reg.dbf. With a partner discuss:
  1. What do you think is the difference between EDU1 and EDU1_Z?
  2. How do you think the EDU_COMP value is determined? How about the COMP_ value?
  3. Can you identify the break values between COMP_INDEX values? Hint: this may be easier to determine from the attribute table of the shapefile.