

**Geography 361—Cartography**  
Penn State Department of Geography

**Cindy Brewer, Fall 2009**

**Lab 3: Labeling and Representing Points** (8%)

Section:	Tues	Wed	Thurs
Assigned:	Sept. 28	Sept. 29	Sept. 30
Progress check:	5	6	7
Due:	12	13	14

Data Sources: *The National Map*, USGS; Pennsylvania Department of Transportation, 2010.

*Assisted by Jim Thatcher and Douglas Minnigh; Mine data downloaded from PASDA (Pennsylvania Spatial Data Access) at [www.pasda.psu.edu](http://www.pasda.psu.edu)*

The goals in completing this lab are to become expert at labeling and symbolizing point features on maps, to prepare a more advanced map layout, and to make use of basemap services.

**Cartographic concepts:**

- Representing point feature categories with labels and symbols
- Representing quantities associated with point features
- Positioning labels for point features, including clarity in indicating locations of point features
- Map layout with three map frames and marginalia

**New tools and skills:**

- Maplex labels for points
- Using basemap services
- Create multiple frames and show their relative locations using extent rectangles.

**Map requirements and grading criteria:**

Create a map for any location in the Pennsylvania subbasins that has enough content to meet the following requirements:

- Center (or near center) the map on a **nameable place** and use that name in the map title
- Include **3** data frames (main map, locator, and inset) with appropriate **extent rectangles**
- At least **30** labels, including at least **5** labels for points
- At least **2** categories of mines and at least **2** categories of point features with **graphic symbols and labels**
- **Proportioned** symbols
- At least **1 extent rectangle**
- Main-map scale is between **1:15,000** and **1:50,000** (rough estimate)
- Map layout fills most of one **8.5x11-inch** page with at least **one-half inch of totally empty margin** on all sides
- Include proper marginalia (see above)
- Labels are **positioned** following cartographic placement guidelines
- Labels are easily and unambiguously **associated with the points** they label
- **Labels** are visually organized into **categories and hierarchies** using type characteristics (fonts, size, etc.). No more than three fonts on the map.
- **Point symbols** are visually organized into **categories and hierarchies** using visual variables (lightness, size, shape, etc.)
- Map **layout** is well balanced and elements are sized to suit their role in map reading.